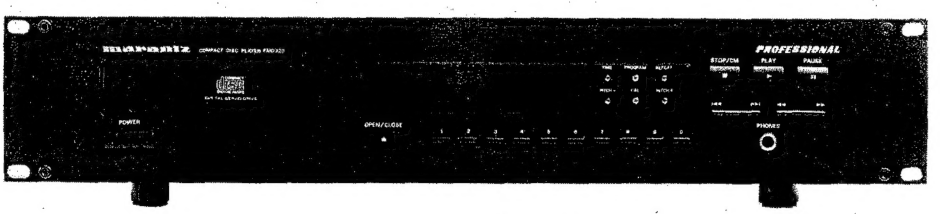
Service Manual

74 PMD320/02B, U
74 PMD321/02B, U
Compact disc Player



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Please use this service manual with referring to the user guide (D.F.U.) without fail.

marantz®

model PMD320 / PMD321

MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, **MARANTZ** company has created the ultimate in stereo sound. Only original **MARANTZ** parts can insure that your **MARANTZ** product will continue to perform to the specifications for which it is famous.

Parts for your **MARANTZ** equipment are generally available to our National Marantz Subsidiary or Agent.

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Parts can be ordered either by mail or by Fax.. In both cases, the correct part number has to be specified.

The following information must be supplied to eliminate delays in processing your order:

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which part is required
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633 GRANITE COURT,
PICKERING, ONTARIO L1W 3K1
CANADA
PHONE : 416-831-6333
FAX : 416-831-6936

EUROPE
MARANTZ EUROPE B.V.
P.O.BOX 80002
BUILDING SFF2
5600 JB EINDHOVEN
THE NETHERLANDS
PHONE : +31-40-732241
FAX : +31-40-735578

***PROFESSIONAL* USA**
SUPERSCOPE TECHNOLOGIES, INC.
MARANTZ PROFESSIONAL PRODUCTS
1000 CORPORATE BLVD., SUITE D
AURORA, ILLINOIS 60504 USA
PHONE : 708-820-4800
FAX : 708-820-8103

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CANADA
PHONE : 514-457-4044
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TRADING
MARANTZ EUROPE B.V.
P.O.BOX 80002
BUILDING SFF2
5600 JB EINDHOVEN
THE NETHERLANDS
PHONE : +31-40-732241
FAX : +31-40-735578

AUSTRALIA
MARANTZ AUSTRALIA
3 Figtree Drive
Australia Centre
Homebush, NSW2140 AUSTRALIA
PHONE : +61 2 742.8311
FAX : +61 2 7643074

HONG KONG
FORWARD INTERNATIONAL CORP. LTD.
15 TH FLOOR, REGENT CENTRE,
88 QUEEN'S ROAD, CENTRAL, H. K.
PHONE : +852 521-0883
FAX : +852 521-7835

THAILAND
MRZ STANDARD CO., LTD.
746-750 WANGBURAPA BANGKOK
10200 THAILAND
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6 TH FL NO. 148 SUNG KIANG RORD,
TAIPEI, 10429. TAIWAN R.O.C.
PHONE : +886 (2) 5221304~8
FAX : +886 (2) 5630415

MALAYSIA
WO KEE HONG ELECTRONICS SDN. BHD.
NO. 102 JALAN SS 21/35, DAMANSARA
UTAMA, 47400 PETALING JAYA
SELANGOR DARUL EHSAN,
MALAYSIA
PHONE : +60 3-7184666
FAX : +60 3-7173828

SINGAPORE
WO KEE HONG (SINGAPORE) PTE. LTD.
29, LENG KEE ROAD
SINGAPORE 0315,
PHONE : +65 475-4555
FAX : +65 475-8623

JAPAN—*Technical*
MARANTZ JAPN INC.
35-1, 7-chome, Sagamiono
Sagamihara-shi, Kanagawa
Japan
PHONE : +81 427 48 2181
FAX : +81 427 48 0889

JAPAN—*Parts Order*
MARANTZ JAPN INC.
35-1, 7-chome, Sagamiono
Sagamihara-shi, Kanagawa
Japan
PHONE : +81 427 48 1013
FAX : +81 427 48 9190

日本マランツ株式会社
本 社〒228 神奈川県相模原市相模大野7丁目35番1号
営業本部〒150 東京都渋谷区恵比寿南1丁目11番9号

SHOCK, FIRE HAZARD SERVICE TEST:

CAUTION: After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or Front Panel of product and controls and chassis bottom.

Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verified before it is return to the user/customer.

Ref. UL Standard NO.1492.

In case of difficulties, do not hesitate to contact the Technical Department at above mentioned address.

1. TECHNICAL SPECIFICATIONS (DIN)

Model PMD320

Audio Characteristics

Channels ..... 2 channels
Sampling frequency ..... 44.1 kHz
Quantization ..... 16-bit linear/channel
Error correction ..... Cross-interleave read solomon code (CIRC)
D/A conversion ..... 1-bit linear/channel
Wow & flutter ..... Precision of quartz (Below measurable limits)

Optical Readout System

Laser ..... GaALAs semiconductor
Wavelength ..... 780 nm

Frequency Characteristics

Frequency range ..... 5 – 20 kHz
Dynamic range ..... > 96 dB
S/N ratio ..... > 104 dB
Channel separation (1 kHz) ..... > 96 dB
THD (1 kHz) ..... 0.004 %
Analogue output jack
  Output level ..... 2V RMS
  Output impedance ..... 200 ohms
Digital output
  Pin jack (IEC958-II) ..... 0.5 Vp-p/75 ohms

Power Supply

Power requirements [/02] ..... 230V AC 50 Hz
[U] ..... 120V AC 60 Hz
Power consumption ..... 13 W

Cabinet, etc.

Dimension (Max)
  Width ..... 19 inches (482.6 mm)
  Height ..... 4-1/16 inches (103.1 mm)
  Depth ..... 12-1/4 inches (312.0 mm)
  Net weight ..... 3.9 kg

Operating temperatures ..... +5 °C ~ +35 °C
Operating humidity ..... 5 % ~ 90 % (without dew)

Accessories

Stereo audio cable with RCA pins ..... 1 set

Model PMD321

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Sampling frequency ..... 44.1 kHz
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Frequency range ..... 5 – 20 kHz
Dynamic range ..... > 96 dB
S/N ratio ..... > 104 dB
Channel separation (1 kHz) ..... > 96 dB
THD (1 kHz) ..... 0.004 %
Analogue output jack (XLR)
  Output level ..... 1.2V RMS at -15 dB unloaded
  Output impedance ..... 100 ohms
Digital output
  Pin jack (IEC958-II) ..... 0.5 Vp-p/75 ohms
  XLR jack (IEC958-II) ..... 3.5 Vp-p/110 ohms

Power Supply

Power requirements [/02] ..... 230V AC 50 Hz
[U] ..... 120V AC 60 Hz
Power consumption ..... 13 W

Cabinet, etc.

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Operating temperatures ..... +5 °C ~ +35 °C
Operating humidity ..... 5 % ~ 90 % (without dew)

Specifications subject to change without prior notice.

2. CAUTION

LASER NOTE:	
DANGER —	Invisible laser radiation when open. AVOID DIRECT EXPOSURE TO BEAM.
CAUTION —	Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
CAUTION —	The use of optical instruments with this product will increase eye hazard.

THE COMPACT DISC PLAYER SHOULD NOT BE ADJUSTED OR REPAIRED BY ANYONE EXCEPT PROPELY QUALIFIED SERVICE PERSONNEL.

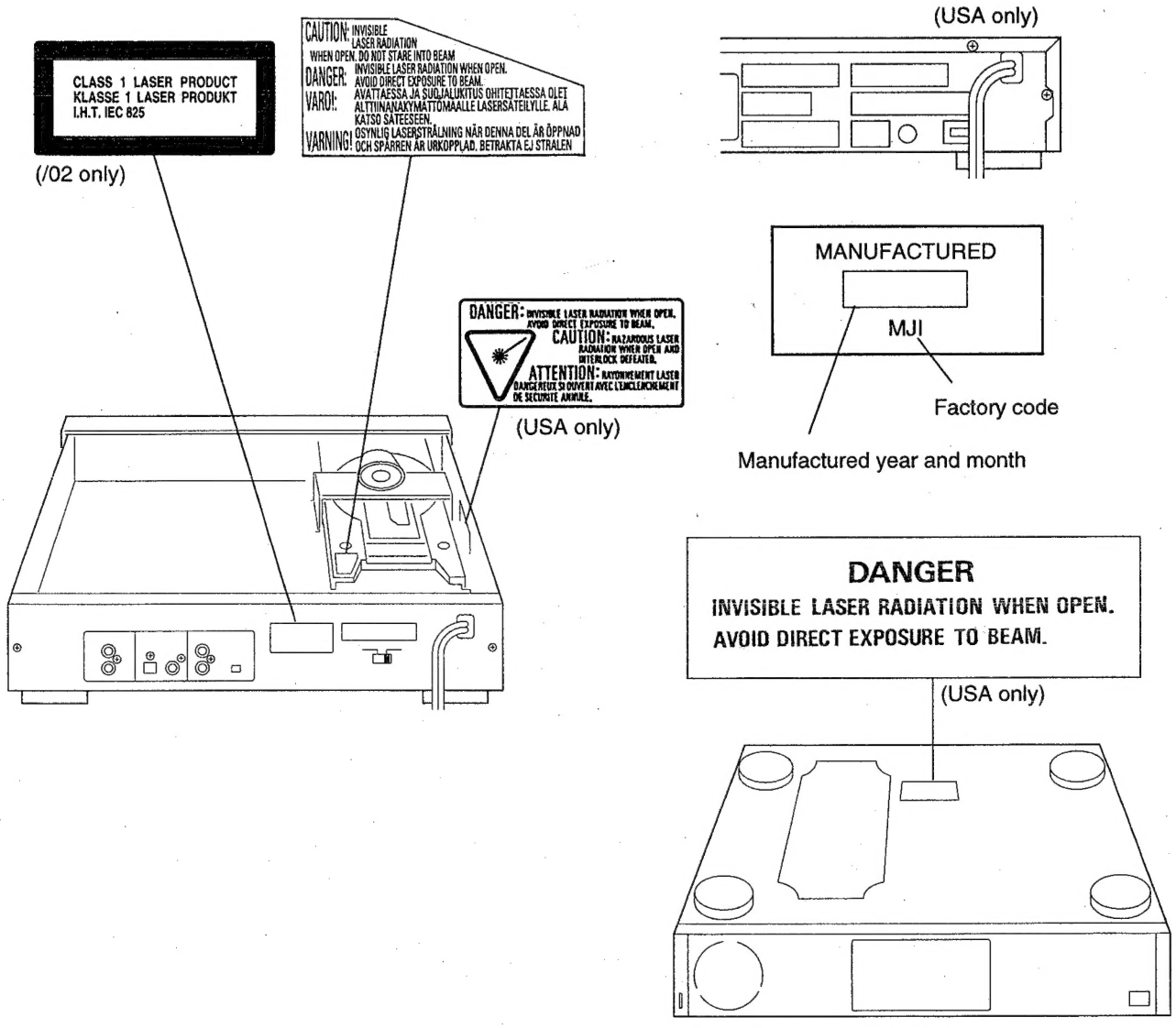
LASER BEAM RADIATION SPOT

Laser Diode Properties
Material: Al GaAs
Wavelength: 780nm ± 20nm
Laser Output: Continuous Wave max. 0.5mW

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

ESD

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD).
Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance.
Keep components and tools also at this potential.

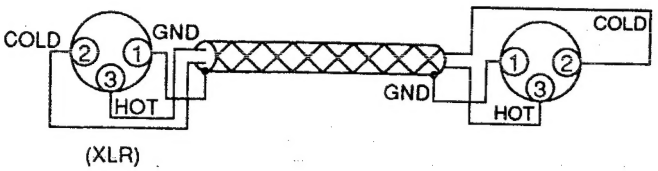


3. NOTES ON BALANCED OUTPUTS CONNECTORS (PMD321 only)

The BALANCED output connectors uses XLR connectors.

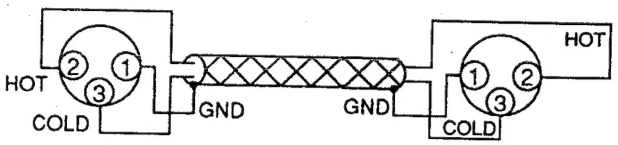
There are two types professional-type internal wiring methods for XLR connectors.

1. ***USA method*** (Pin 2=COLD, Pin 3=HOT)



(XLR)

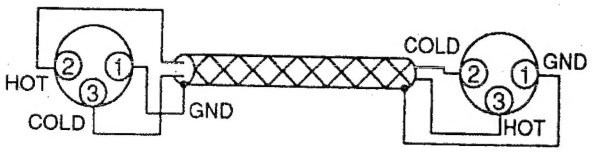
2. ***Europe method*** (Pin 2=HOT, Pin 3=COLD)



(XLR)

The models use the Europe method described in 2 above.

When XLR connector cables are used and if your preamplifier or main amplifier uses the USA method, the reproduced signal may be out of phase.
In this case, change the connections of pin 2 and pin 3 of one of the XLR connectors of the cable to the Europe method.
Also when you use an XLR balanced cable (see illustration below) and if the preamplifier or main amplifier uses the Europe method, change the connections of pin 2 and pin 3 of one of the XLR connectors of the cable to the Europe method.



(XLR) (XLR)

Now the signal can be reproduced in proper phase.

4. SERVICE MODE

1. How to enter into the Service Mode
   - Turn the power on while pressing at least 2 of [STOP/CUE], [PLAY], [NEXT], [PREV] keys.

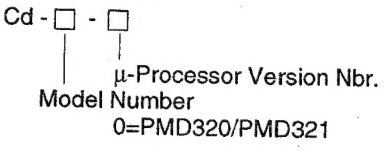
2. Mode 0 (Display P 00)
   Condition: [FOCUS OFF] [SPINDLE OFF] [RADIAL OFF] [MUTE ON]
   - The sled moves outside when pressing [FF] or [REW] keys.
   - The function moves to Mode 1 when pressing [NEXT] key.

3. Mode 1 (Display P 01)
   Condition: [FOCUS ON] [SPINDLE OFF] [RADIAL OFF] [MUTE ON]
   - The function moves to Mode 2 when pressing [NEXT] key.
   - The function moves to Mode 0 when pressing [PREV] key.

4. Mode 2 (Display P 02)
   Condition: [FOCUS ON] [SPINDLE ON] [RADIAL OFF] [MUTE ON]
   - The function moves to Mode 3 when pressing [NEXT] key.
   - The function moves to Mode 0 when pressing [PREV] key.

5. Mode 3 (Display P 03)
   Condition: [FOCUS ON] [SPINDLE ON] [RADIAL ON] [MUTE OFF]
   - The Sled moves outside when pressing [FF] key.
   - The Sled moves inside when pressing [REW] key.
   - The function moves to Mode 2 when pressing [PREV] key.

   * The following key operation can be available at all of the conditions of the service mode.
   1) All of FL display light by pressing [STOP/CUE] key.
   2) Model Number and Version Nbr of the μ-processor are displayed by pressing [PAUSE] key.



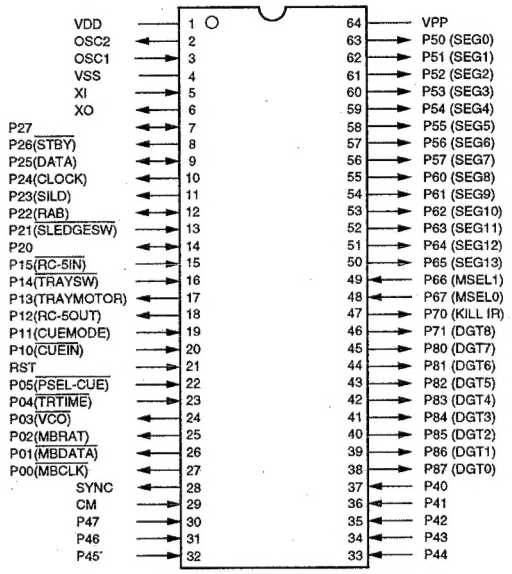
   3) The same as Normal operation (except Service mode) is performed by pressing [PLAY] key.
   However if some default is detected, an error code is displayed. (For example: Err 10)
   The content for each error code is shown below.

Error Code	Error
Err 02	FOCUS Error
Err 07	SUB CODE Error
Err 08	T. O. C Error
Err 09	DECODER Error
Err 10	RADIAL Error
Err 11, 12	SLED Error
Err 13	SPINDLE Error
Err 16 ~ 20	SEARCH Error
Err 30	DOOR Error
Err 31	TRAY Error
Err 32 ~ 47	KEY INPUT Error

6. Cancelling the Service Mode
   - The Service Mode is cancelled by turning the power off.

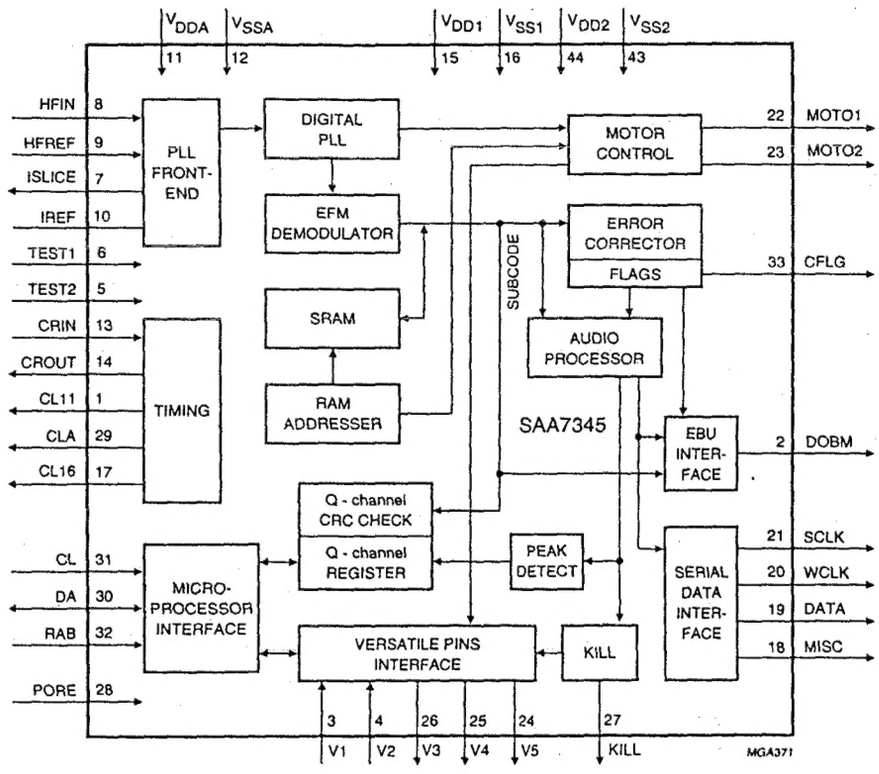
5. MICROPROCESSOR AND IC DATA

MN187164 (MICROPROCESSOR)



Pin Nbr	Pin Name	I/O	Function	Pin Nbr	Pin Name	I/O	Function
1	Vdd	-	Power Supply +5V	33	P44	I	Key Input, KEY 5
2	OSC2	O	Clock out (8.0MHz)	34	P43	I	Key Input, KEY 4
3	OSC1	I	Clock in (8.0MHz)	35	P42	I	Key Input, KEY 3
4	Vss	-	GND 0V	36	P41	I	Key Input, KEY 2
5	XI	I	0V	37	P40	I	Key Input, KEY 1
6	XO	O	Not Used	38	P87 (DGT0)	O	FL Digit Data, G9
7	P27	I/O	Not Used	39	P86 (DGT1)	O	FL Digit Data, G8
8	P26 $\overline{\text{STBY}}$	O	TDA1301 RESET, NRST	40	P85 (DGT2)	O	FL Digit Data, G7
9	P25 DATA	I/O	Data Bus Data, SIDA	41	P84 (DGT3)	O	FL Digit Data, G6
10	P24 CLOCK	O	Data Bus Clock, SICK	42	P83 (DGT4)	O	FL Digit Data, G5
11	P23 SILD	O	TDA1301 SILD (latch)	43	P82 (DGT5)	O	FL Digit Data, G4
12	P22 RAB	I/O	SAA7345 RAB	44	P81 (DGT6)	O	FL Digit Data, G3
13	P21 $\overline{\text{SLEDGESW}}$	I	Sledge SW, SLSW	45	P80 (DGT7)	O	FL Digit Data, G2
14	P20 $\overline{\text{MUTE}}$	I/O	Not Used	46	P71 (DGT8)	O	FL Digit Data, G1
15	P15 $\overline{\text{RC5IN}}$	I	RC-5 code Input	47	P70 KILL IR	O	Kill IR, N.C.
16	P14 $\overline{\text{TRAYSW}}$	I	Tray In/Out SW, TRSW	48	P67 MSEL0	I	Model Select SW 0
17	P13 TRAYMOTOR	O	Tray Motor	49	P66 MSEL1	I	Model Select SW 1
18	P12 RC5OUT	O	RC-5 code Output	50	P65 (SEG13)	O	FL Segment Data, P1
19	P11 CUEMODE	I	CUE Mode Select	51	P64 (SEG12)	O	FL Segment Data, P2
20	P10 $\overline{\text{CUEIN}}$	I	Not Used	52	P63 (SEG11)	O	FL Segment Data, P3
21	RST	I	RESET	53	P62 (SEG10)	O	FL Segment Data, P4
22	P05 $\overline{\text{PSEL-CUE}}$	I	Pause Select CUE	54	P61 (SEG9)	O	FL Segment Data, P5
23	P04 $\overline{\text{TRTIME}}$	I	Tray Time	55	P60 (SEG8)	O	FL Segment Data, P6
24	P03 $\overline{\text{VCO}}$	O	VCO Select	56	P57 (SEG7)	O	FL Segment Data, P7
25	P02 MBRAT	O	MB87014 RAT	57	P56 (SEG6)	O	FL Segment Data, P8
26	P01 $\overline{\text{MBDATA}}$	O	MB87014 DATA	58	P55 (SEG5)	O	FL Segment Data, P9
27	P00 $\overline{\text{MBCLK}}$	O	MB87014 CLK	59	P54 (SEG4)	O	FL Segment Data, P10
28	SYNC	O	Not Used	60	P53 (SEG3)	O	FL Segment Data, P11
29	CM	I	0V	61	P52 (SEG2)	O	FL Segment Data, P12
30	P47	I	Key Input, KEY 8	62	P51 (SEG1)	O	FL Segment Data, P13
31	P46	I	Key Input, KEY 7	63	P50 (SEG0)	O	FL Segment Data, P14
32	P45	I	Key Input, KEY 6	64	Vpp	-	Power Supply -25V, VFTD

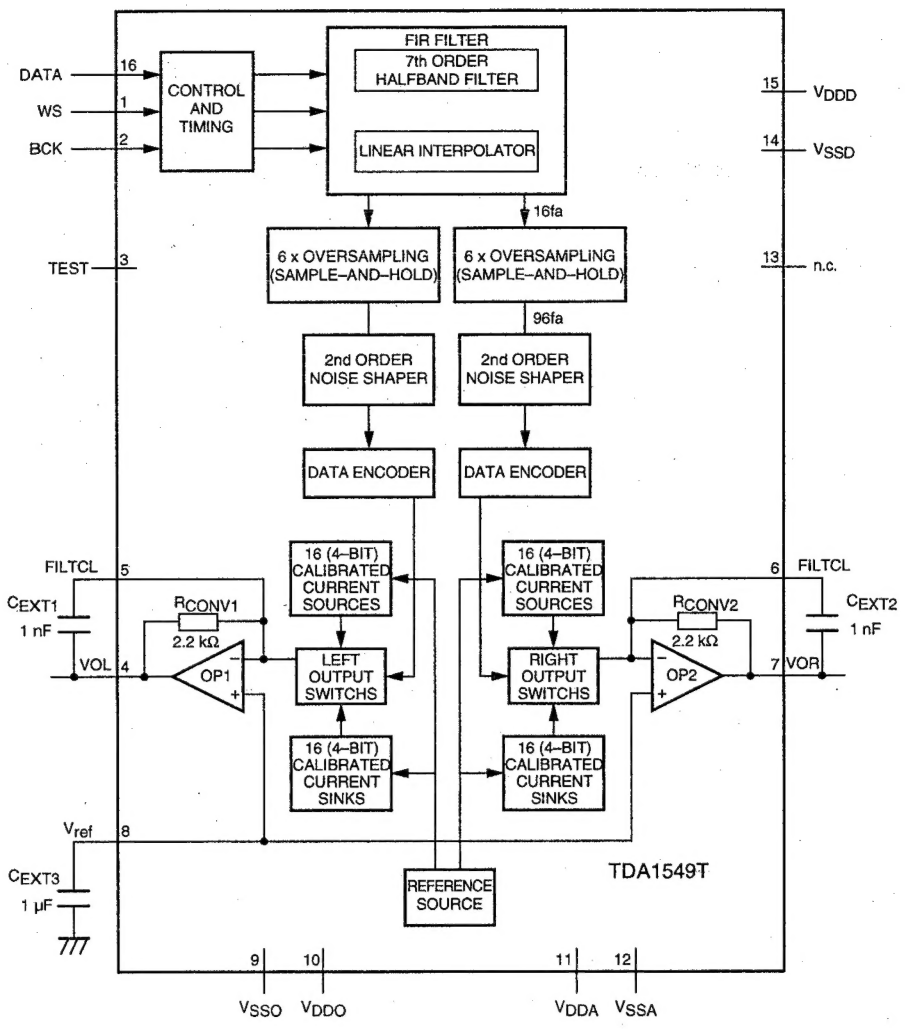
SAA7345GP/M5 (DIGITAL DECODING IC WITH RAM)



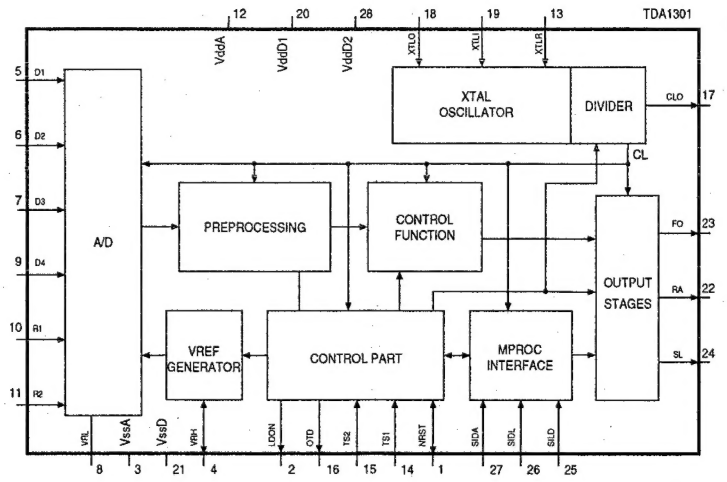
Pin Nbr	Pin Name	I/O	Function
1	CL11	O	11.2896MHz clock output (3-state)
2	DOBM	O	Bi-phase mark output (externally buffered; 3-state)
3	V1	I	Versatile input pin
4	V2	I	Versatile input pin
5	TEST2	I	Test input: this pin should be tied LOW
6	TEST1	I	Test input; this pin should be tied LOW
7	ISLICE	O	Current feedback from data slicer
8	HFIN	I	Comparator signal input
9	HFREF	I	Comparator common-mode input
10	IREF	-	Reference current pin (nominally $V_{DD}/2$)
11	V_{DDA}	-	Power supply (Analogue)
12	V_{SSA}	-	GND (Analogue)
13	CRIN	I	Crystal/resonator input, 16.9344 MHz
14	CROUT	O	Crystal/resonator output
15	V_{DD1}	-	Power supply 1 (Digital)
16	V_{SS1}	-	GND 1 (Digital)
17	CL16	O	16.9344MHz system clock output
18	MISC	O	General purpose DAC output (3-state)
19	DATA	O	Serial data output (3-state)
20	WCLK	O	Word clock output (3-state)
21	SCLK	O	Serial bit clock output (3-state)
22	MOTO1	O	Motor output 1; versatile (3-state)

Pin Nbr	Pin Name	I/O	Function
23	MOTO2	O	Motor output 2; versatile (3-state)
24	V5	O	Versatile output pin
25	V4	O	Versatile output pin
26	V3	O	Versatile output pin (open-drain)
27	KILL	O	Kill output; programmable (open-drain)
28	PORE	I	Power-on reset enable input (active LOW)
29	CLA	O	4.2336MHz microprocessor clock output
30	DA	I/O	Interface data I/O line
31	CL	I	Interface clock input line
32	RAB	I	Interface R/$\overline{W}$ and acknowledge input
33	CFLG	O	Correction flag output (open-drain)
34	—	-	No internal connection
35	—	-	
36	—	-	
37	—	-	
38	—	-	
39	—	-	
40	—	-	
41	—	-	
42	—	-	
43	V_{SS2}	-	GND 2 (Digital)
44	V_{DD2}	-	Power supply 2 (Digital)

TDA1549T/N1 (DAC)



TDA1301T (DIGITAL SERVO)



6. SERVICING HINTS (Pitch Control)

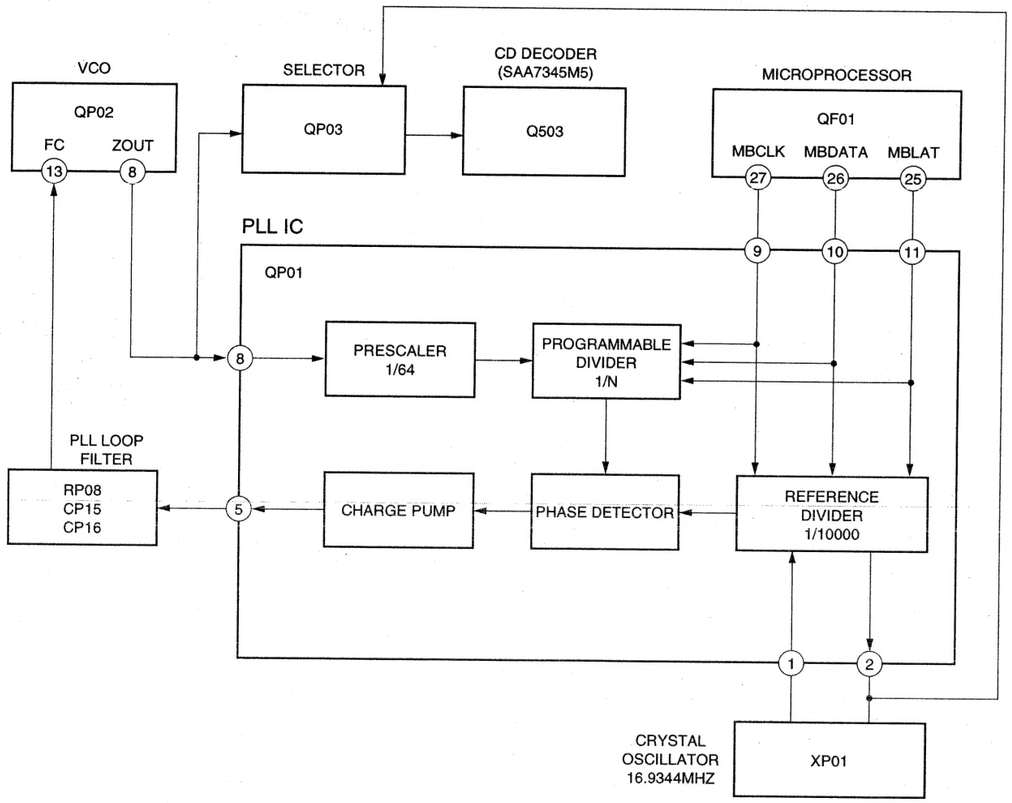
- The pitch of the PMD320 should be controlled by changing the clock frequency, which will be input to the CD Decoder Q503, with using PLL.

- PLL is composed of VCO QP02, Crystal Oscillator XP01, PLL IC QP01, PLL loop filter RP08, CP15 and CP16.

- At the beginning condition after switching ON, or when the 'CAL.' key is pressed, the clock data of the crystal oscillator will be input to the CD Decoder Q503 directly from Selector QP03.

- If either "PITCH +" key or "PITCH –" key is pressed, the clock data of VCO QP02 will be input to the CD Decoder Q503 directly from the Selector QP03.

- The PLL should be set into operation frequency by the microprocessor QF02 which located at pins 25, 26 and 27.



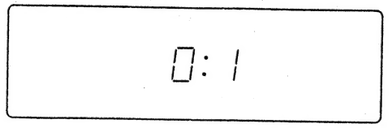
Pitch Control

The CD playback speed and pitch can be varied by +/- 12%.

Caution:
When the CD playback speed is varied with the PMD320/PMD321 pitch control, the sample rate is varied and digital recording may not be possible.

Incresing up the CD playback speed.

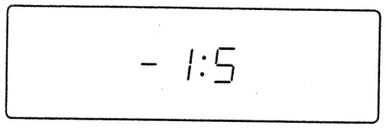
1. Press the [PITCH +] button. Display the current playback speed.
   (eg. the playback speed is +0.1%.)



2. Every time pressing the [PITCH +] button, the playback speed is 0.1% up.
3. After 1.5 seconds pressing the [PITCH +] button, the display returns to normal.

Decresing the CD playback speed.

1. Press the [PITCH –] button. Display the current playback speed.
   (eg. the playback speed is -1.5%.)



2. Every time pressing the [PITCH –] button, the playback speed is 0.1% down.
3. After 1.5 seconds pressing the [PITCH –] button, the display returns to normal.

Returning to the normal speed

There are 2 ways to return the normal speed.

a. Press the [CAL.] button.

b. Change the [PITCH +] or [PITCH –] button to set the playback speed to 0.0%.

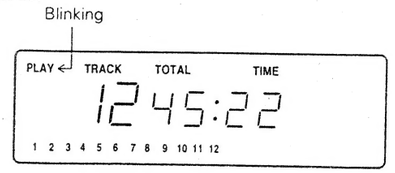
* When the CD playback speed is varied (including the 0.0% speed), the indicator ":" on the display blinks.

We recommend using the [CAL.] button to return to normal playback for higher clock accuracy.

Digital audio equipment, such as a D/A converter, digital sound processor, etc., may not lock to the digital output signal, when you connect the digital output terminal to the digital audio equipment and change the pitch.
Press the [CAL.] button to set the pitch to 0.0%.

AUDIO CUE (only PMD321)

This function skips the silent pessage at the beginning of a track and start playback just before the audio begins.
Press the [CUE] button.
The "PLAY" indicator will blink, indicating the AUDIO CUE mode.



You can now select a track with the PLAY and numeric (0-9) [⏮] or [⏭] buttons. The PMD321 will cue to the beginning of the audio of the selected track.

Starting tracks

- Press the [PAUSE] button.

Releasing the AUDIO CUE mode

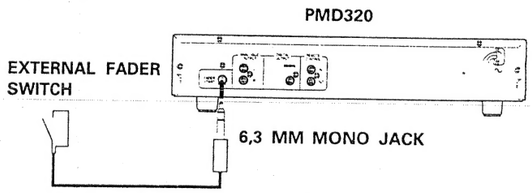
- Press the [CUE] button.

* The sound detecting level is approx. -42.1 dB. Tracks which are not recorded over this level do not work correctly.

* The beginning of fade-in tracks may not be played back.

FADER START REMOTE CONNECTION

The fader start connection will enable you to start and stop playback of a selected track by means of an external switch.
This can be the fader start switch, Built into a mixing desk.



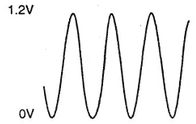
OPERATION

MODE	OPEN	CLOSE
PLAY	NO ACTION	GO TO PAUSE
PAUSE	START PLAYBACK	NO ACTION

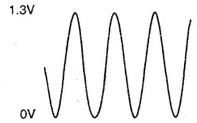
Playback is started when opening the fader switch.
When the fader switch is closed, the CD-player goes to pause mode.

7. WAVE FORM

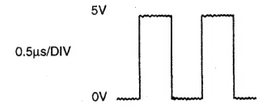
◇1 50ns/DIV



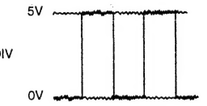
◇2 50ns/DIV



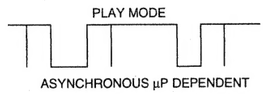
◇3 SERVICE POSITION 0~2
◇4 SERVICE POSITION 0~2
◇5 SERVICE POSITION 0



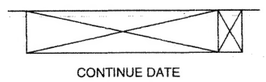
◇3 SERVICE POSITION 3
◇4 SERVICE POSITION 3
◇5 SERVICE POSITION 1~3



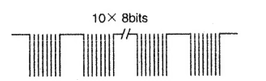
◇6 10ms/DIV



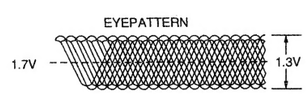
◇7 0.2ms/DIV



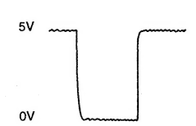
◇8 0.2ms/DIV



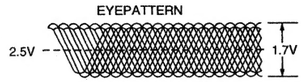
◇9 0.5µs/DIV



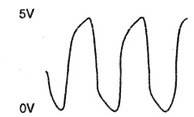
◇10 0.1µs/DIV



◇11 0.5µs/DIV

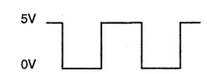


◇12 20ns/DIV

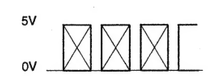


◇13 50ns/DIV

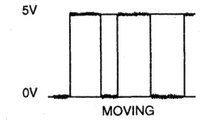
◇14 1µs/DIV



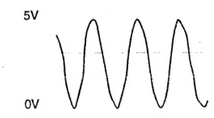
◇15 1µs/DIV



◇16 1µs/DIV

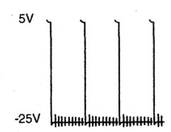


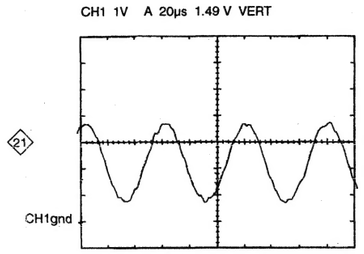
◇17 50ns/DIV

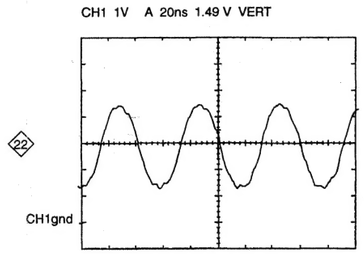


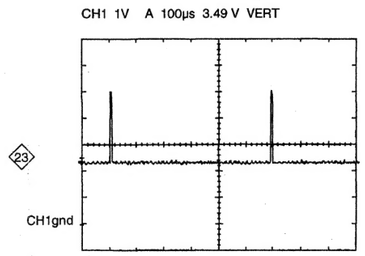
◇18 50ns/DIV

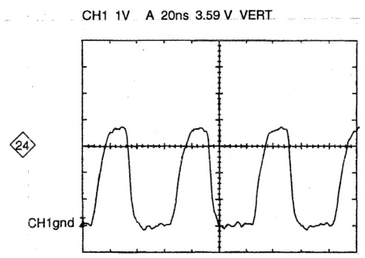
◇19 ◇20 1ms/DIV

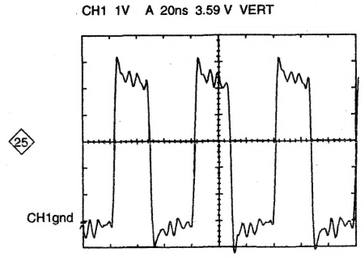


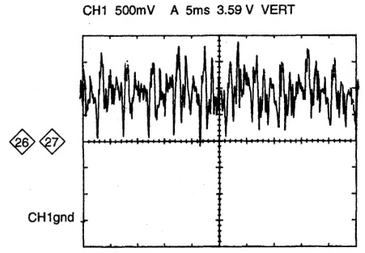




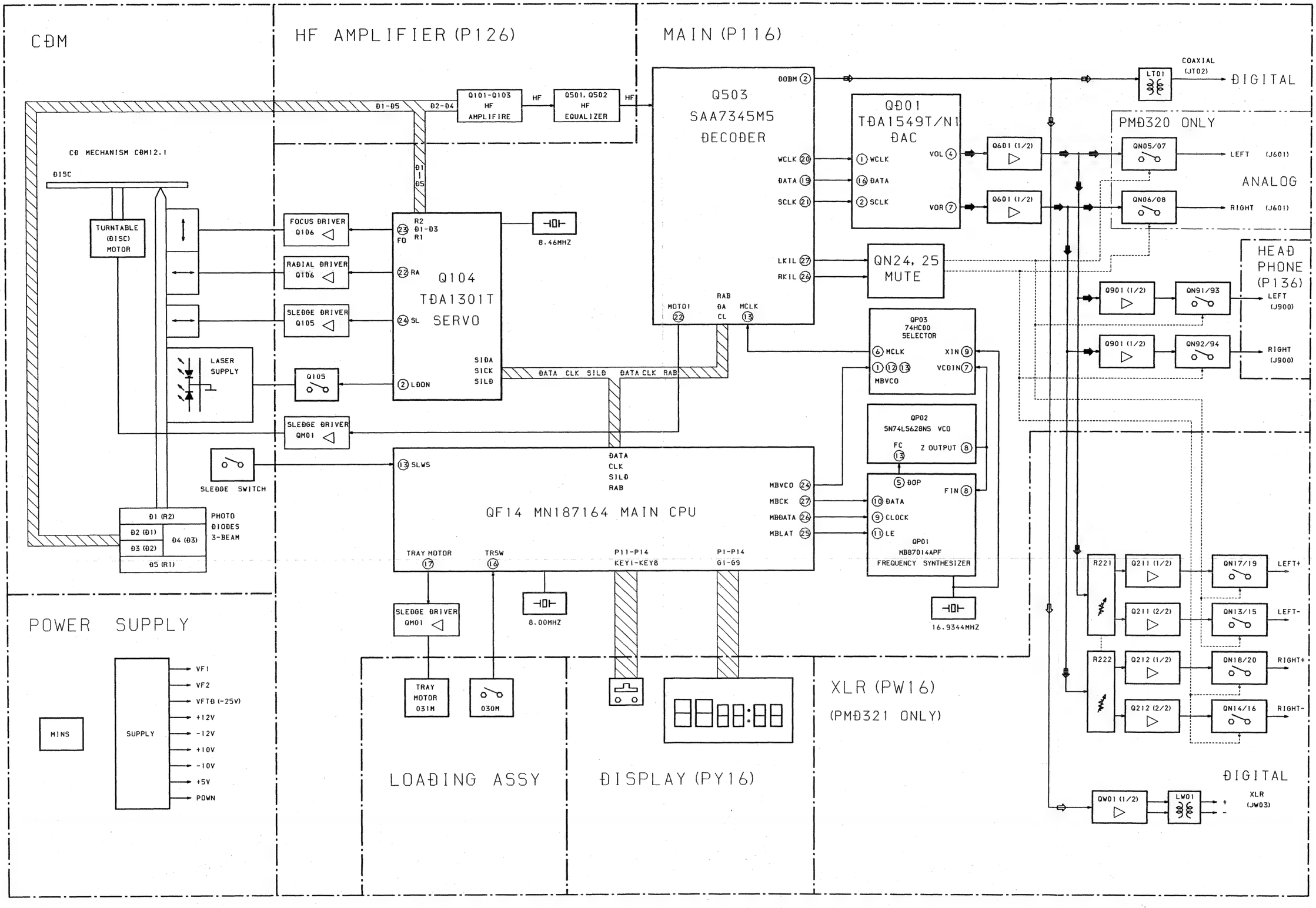




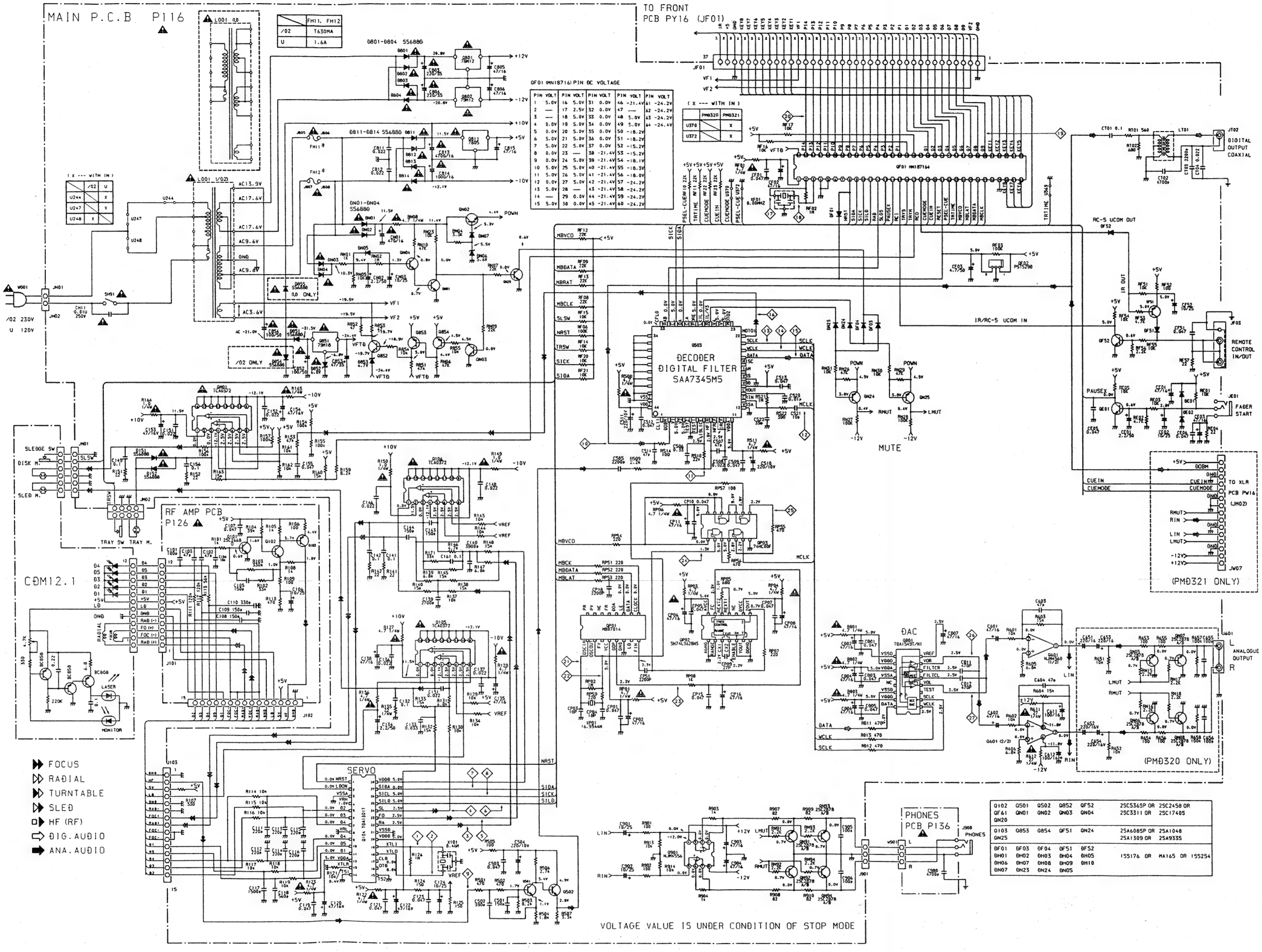




8. BLOCK DIAGRAM



9. SCHEMATIC DIAGRAMS AND PARTS LOCATION (PATTERN SIDE)



	FH11, FH12
/02	T630MA
U	1.6A

	/02	U
U244		X
U247		X
U248	X	

	PM0320	PM0321
U370		X
U372		X

QF01 (MN187164) PIN DC VOLTAGE

PIN	VOLT	PIN	VOLT	PIN	VOLT	PIN	VOLT	PIN	VOLT
1	5.0V	16	5.0V	31	0.0V	46	-21.4V	61	-24.2V
2	—	17	2.5V	32	0.0V	47	—	62	-24.2V
3	—	18	5.0V	33	0.0V	48	5.0V	63	-24.2V
4	0.0V	19	5.0V	34	0.0V	49	5.0V	64	-24.4V
5	0.0V	20	5.0V	35	0.0V	50	-18.2V		
6	5.0V	21	5.0V	36	0.0V	51	-18.2V		
7	5.0V	22	5.0V	37	0.0V	52	-15.2V		
8	0.0V	23	—	38	-21.4V	53	-15.2V		
9	0.0V	24	5.0V	39	-21.4V	54	-18.1V		
10	5.0V	25	5.0V	40	-21.4V	55	-18.3V		
11	5.0V	26	5.0V	41	-21.4V	56	-18.0V		
12	0.0V	27	5.0V	42	-21.4V	57	-24.2V		
13	5.0V	28	—	43	-21.4V	58	-24.2V		
14	—	29	0.0V	44	-21.4V	59	-24.2V		
15	5.0V	30	0.0V	45	-21.4V	60	-24.2V		

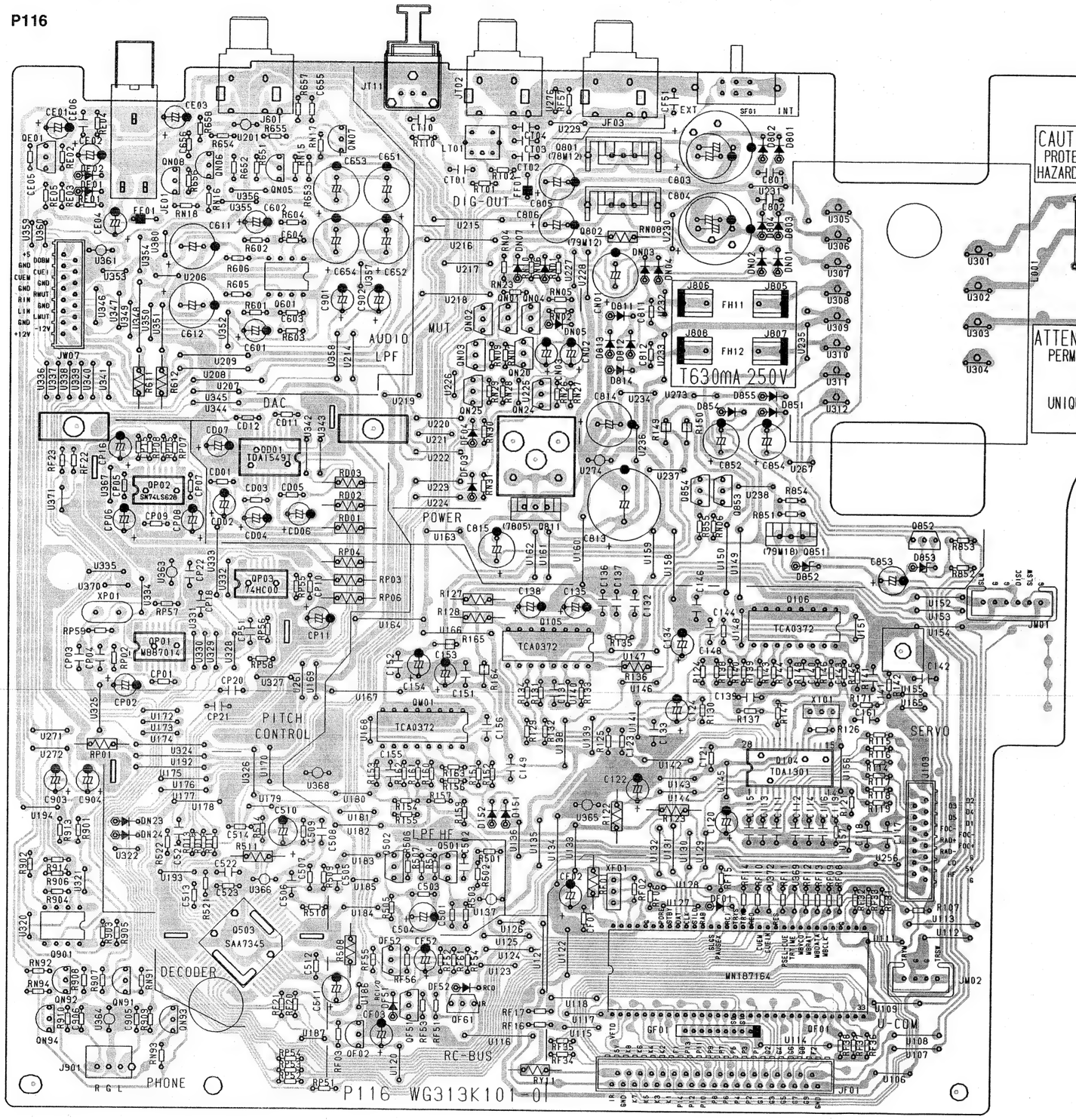
Q102	Q501	Q502	Q852	QF52	2SC5365P OR 2SC2458 OR
QF61	QN01	QN02	QN03	QN04	2SC3311 OR 2SC1740S
QN20					
Q103	Q853	Q854	QF51	QN24	2SA6085P OR 2SA1048
QN25					2SA1309 OR 2SA933S
DF01	DF03	DF04	DF51	DF52	
DH01	DH02	DH03	DH04	DH05	1SS176 OR MA165 OR 1SS254
DH06	DH07	DH08	DH09	DH10	
DN07	DN23	DN24	DN05		

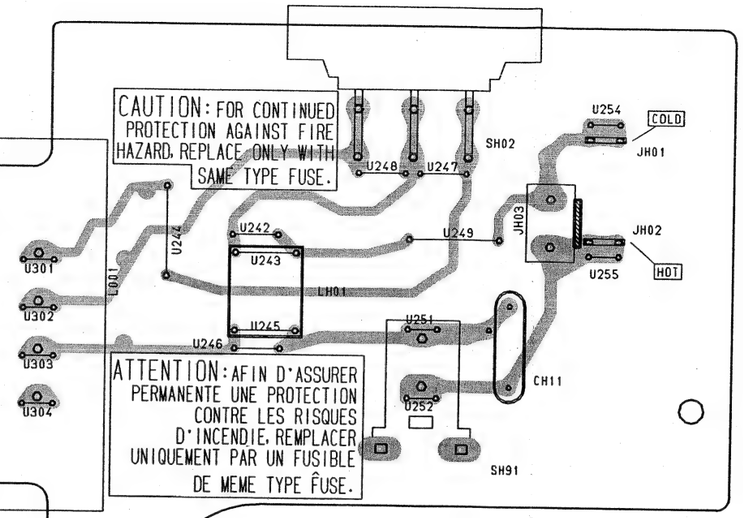
QE01 QN08 QN06 QN05,Q601 QN07 QN01~QN04,QN25,QN20,QN24, Q801,Q802

QP01,QP02 QD01,QP03 QM01 Q811,Q105 Q854,Q853 Q106,Q851 Q852

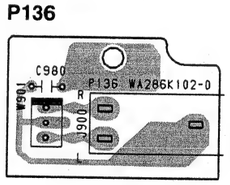
QN94,Q901,QN92 QN91 QN93 Q503 QF02 QF52,Q502,QF51 Q501 QF61 QF01 Q104

P116





P136

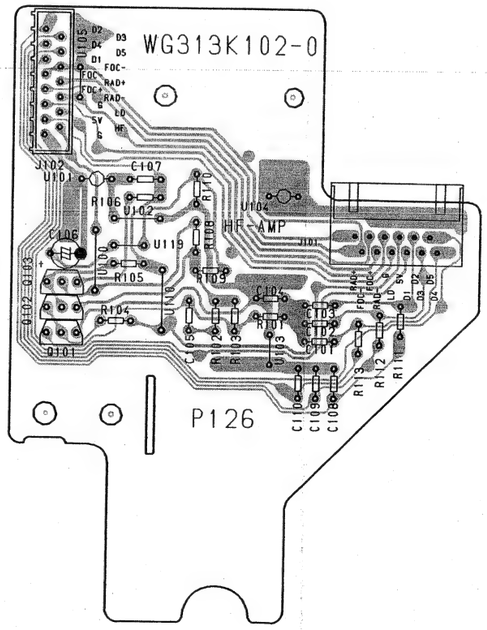


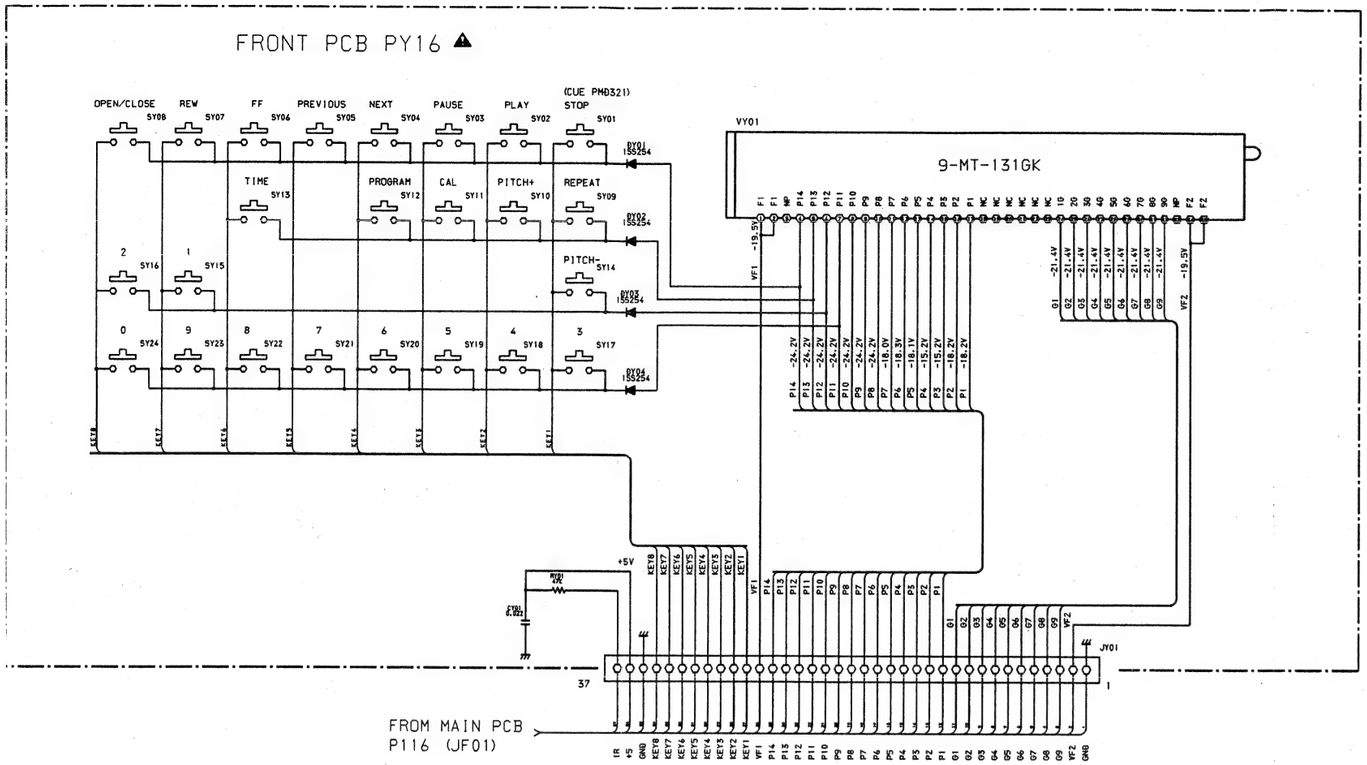
Q103

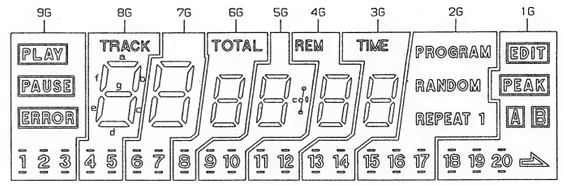
Q102

Q101

P126





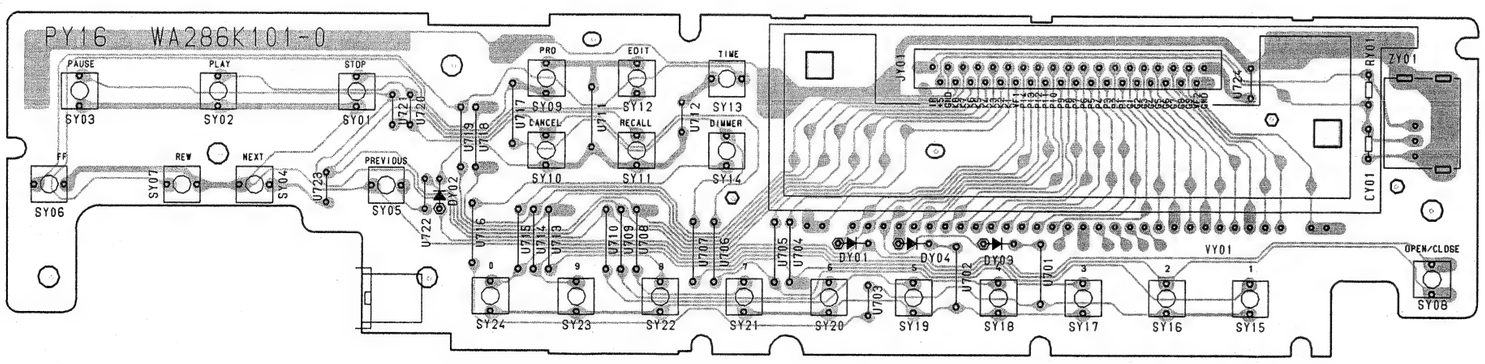


ANODE CONNECTION

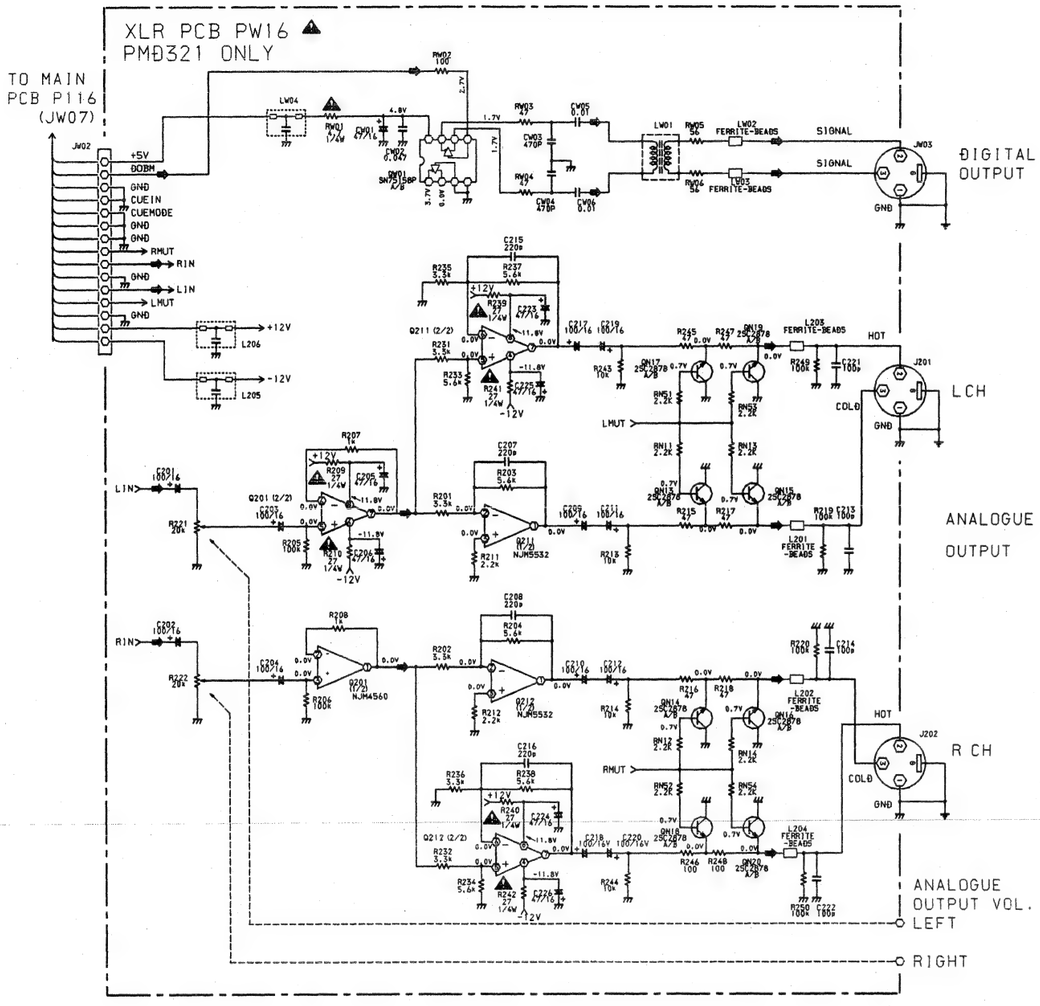
	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	-	a	a	a	a	a	a	PROGRAM	PEAK
P2	(1)	b	b	b	b	b	b	15	18
P3	1	c	c	c	c	c	c	(15)	(18)
P4	(1)	d	d	d	d	d	d	1	▱
P5	-	e	e	e	e	e	e	REPEAT	B
P6	ERROR	f	f	f	f	f	f	-	A
P7	(2)	g	g	g	g	g	g	(15)	(18)
P8	2	(4)	-	TOTAL	col	REM	(13)	(16)	(19)
P9	(2)	4	(6)	-	(9)	(11)	13	16	19
P10	(3)	(4)	6	(8)	9	11	(13)	(16)	(19)
P11	3	(5)	(6)	8	(9)	(11)	(14)	(17)	(20)
P12	(3)	5	(7)	(8)	(10)	(12)	14	17	20
P13	PLAY	(5)	7	-	10	12	(14)	(17)	(20)
P14	PAUSE	TRACK	(7)	-	(10)	(12)	TIME	RANDOM	EDIT

9-MT-131GK
ANODE CONNECTION

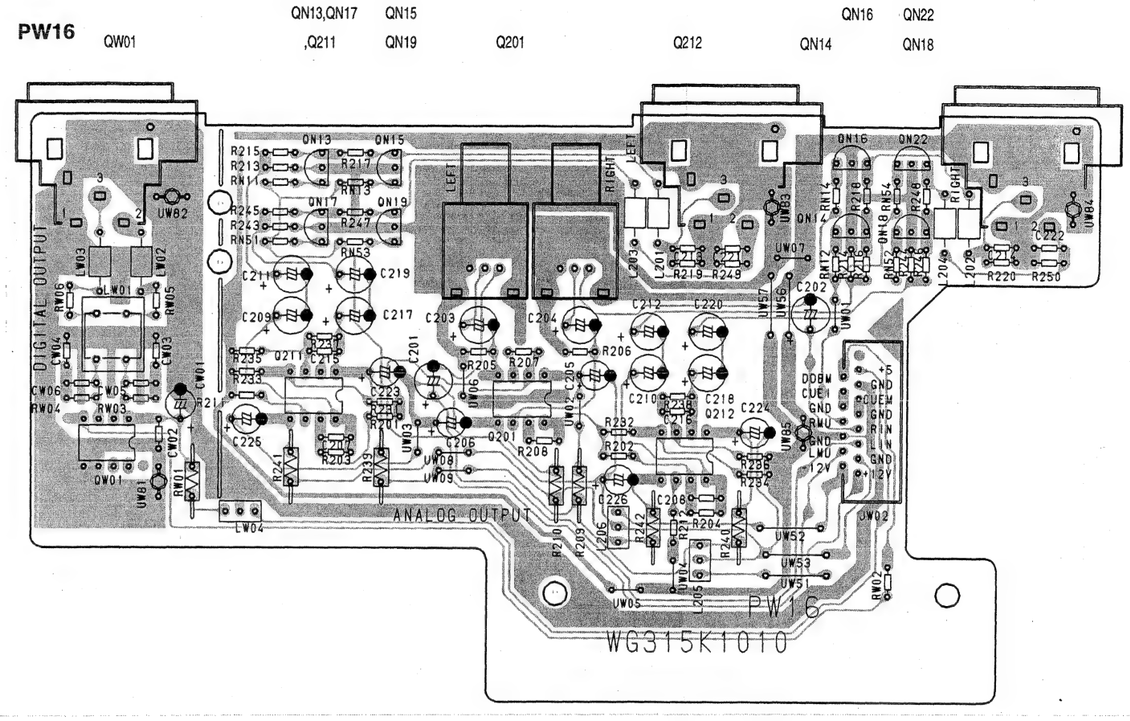
PY16



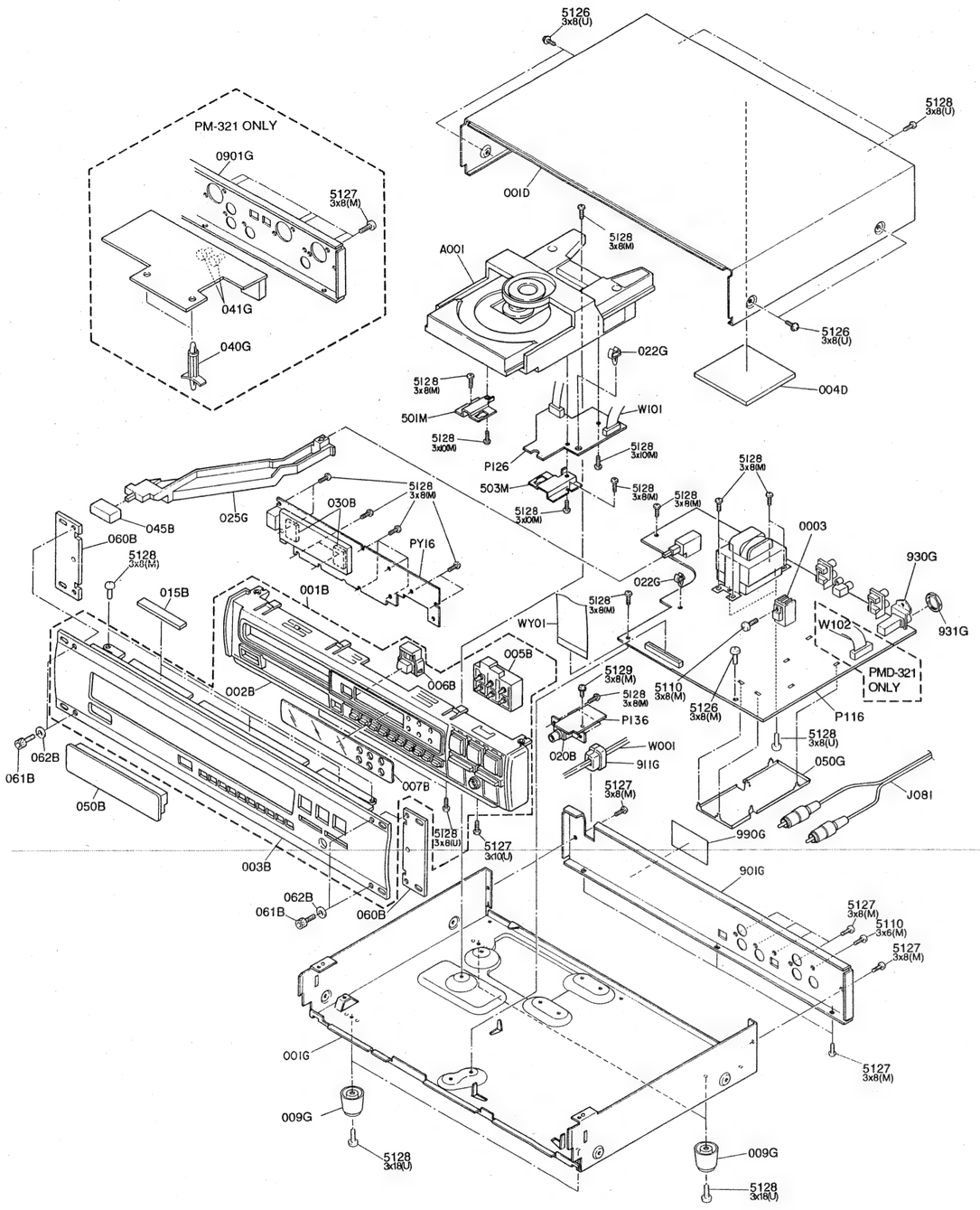
[PMD321 Only]



PW16



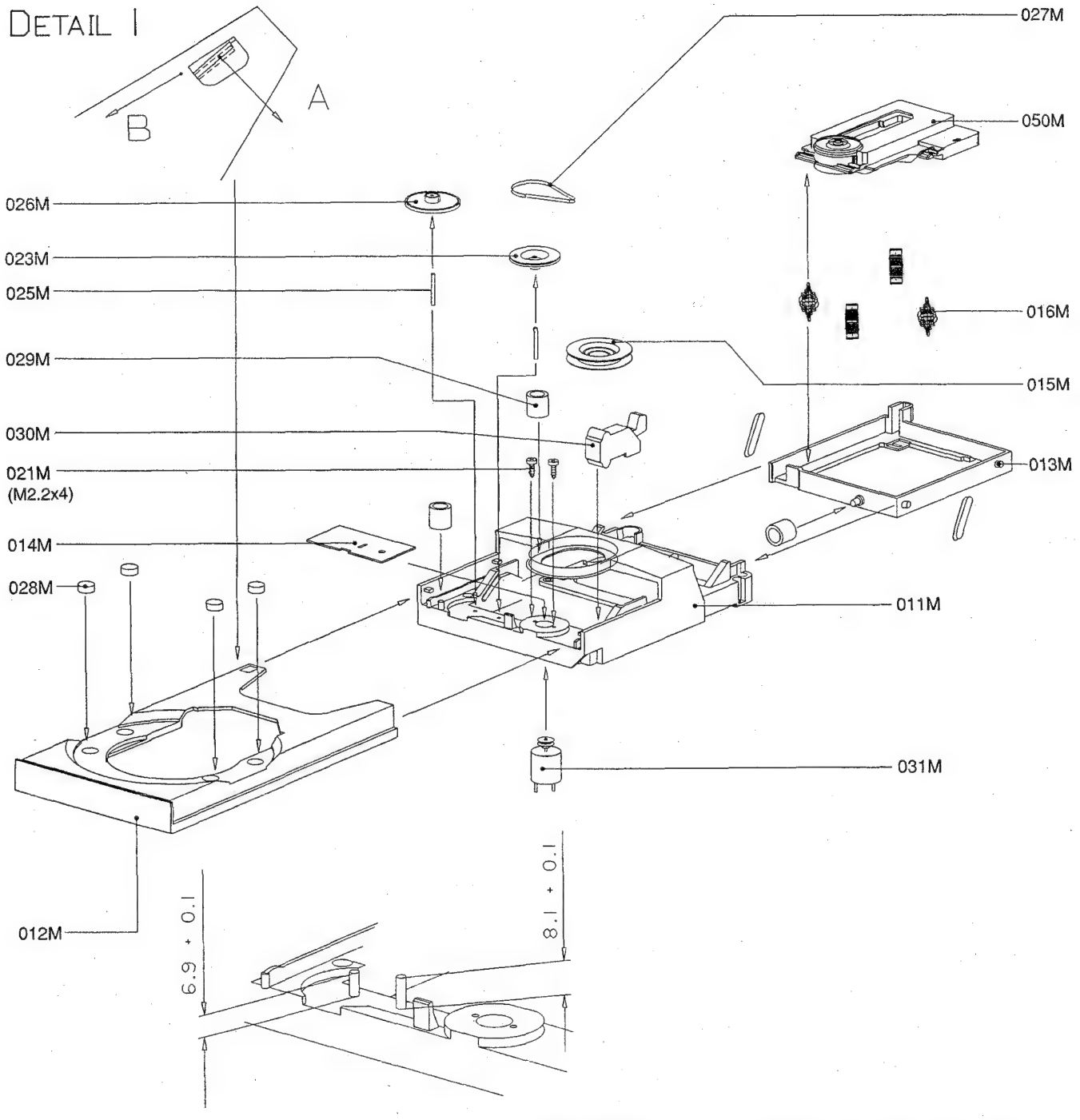
10. EXPLODED VIEW AND PARTS LIST



[VERS. :VERSION, U:U.S.A, F:Japan, K:Far East, /XX:Europe]

POS. NO.	VERS. COLOR	PART NO. (For EUROPE)	DESCRIPTION	PART NO. (For U/K/F)
002B	/02		CHASSIS, FRONT PL	285K105210
002B	U		CHASSIS, FRONT PL	285K105020
003B			FRONT PANEL, AL [PMD320]	313K248010
003B			FRONT PANEL, AL [PMD321]	315K248010
005B		4822 410 62898	BUTTON, D3 GOLD HOT STAMPED	285K270020
006B	U		BUTTON, OPEN/CLOSE	285K270030
006B	/02		BUTTON, OPEN/CLOSE	285K270230
007B			WINDOW [PMD320]	313K158010
045B		4822 410 62744	BUTTON, POWER	285K270010
050B		4822 454 30491	ESCUTCHEON, DISC TRAY FRONT	285K063010
060B			BRACKET, RACK MOUNT	313K160010
061B			H.S. HEAD BOLT	52730408U0
062B		4822 532 11287	WASHER	59046502G0
001D			LID, TOP COVER	285K257010
009G		4822 462 41771	LEG (BLACK MOLD)	229K057010
025G		4822 403 70989	LINK, POWER SW.	285K121010
911G		4822 532 60948	BUSHING, AC CORD BUSH	450H259010
⚠W001	U		A.C.POWER CORD	YC01800330
⚠W001	/02	4822 321 10428	A.C.POWER CORD	YC01800340
W102		4822 321 63052	JUMPER LEAD SUMI CARD 15P 60MM [PMD321]	YU15060520
WY01	/02		JUMPER LEAD SUMI CARD 37P 120MM	YU37120500
WY01	U		JUMPER LEAD SUMI CARD 37P 120MM	YU37120520
			PACKING	
001T	U		USER MANUAL [PMD320/321]	313K851250
001T	/02		USER MANUAL [PMD320/321]	313K851310
J081		4822 321 21438	CONNECTIVE CORD, RCA [PMD320]	ZD01000330

LOADER



[VERS. :VERSION, U:U.S.A, F:Japan, K:Far East, /XX:Europe]

POS. NO.	VERS. COLOR	PART NO. (For EUROPE)	DESCRIPTION	PART NO. (For U/K/F)
011M		4822 444 50678	CHASSIS	271K105030
012M		4822 444 50679	TRAY, SLIDE	271K163010
013M		4822 464 50895	SUBCHASSIS	271K105040
015M		4822 402 61412	CLAMPER ASSY	271K005010
016M		4822 325 50215	BUFFER, SUSPENSION	271K056010
021M		4822 502 12001	SCREW	271K010010
023M		4822 528 81465	PULLEY	271K262010
026M		4822 528 81464	GEAR, DRIVE PINION	271K058010
027M		4822 358 31168	BELT, DRIVE	271K264010
028M		4822 325 80511	BUFFER, ORNAMENTAL TULE	271K056030
029M		4822 325 60379	BUFFER, DAMPING GROMMET	271K056020
030M		4822 276 13222	MINI SW, SINMEI QAS12299	*SM000300R
031M		4822 361 21492	D.C.MOTOR	*MM000660R
050M		4822 691 30278	MECHANISM, CDM12.1	271K304560

11. ELECTRICAL PARTS LIST

ASSIGNMENT OF COMMON PARTS CODES.

RESISTOR

R＊＊＊ : (1) GD05 x x x 140, Carbon film fixed resistor, ±5% 1/4W
R＊＊＊ : (2) GD05 x x x 160, Carbon film fixed resistor, ±5% 1/6W

① ——— Resistance value

Examples ;
① Resistance value

0.1 Ω.....001	10 Ω.....100	1 kΩ.....102	100 kΩ.....104
0.5 Ω.....005	18 Ω.....180	2.7 kΩ.....272	680 kΩ.....684
1 Ω.....010	100 Ω.....101	10 kΩ.....103	1 MΩ.....105
6.8 Ω.....068	390 Ω.....391	22 kΩ.....223	4.7 MΩ.....475

(Note) Please distinguish 1/4W from 1/6W by the shape of parts used actually.

C＊＊＊ : CERAMIC CAP.
(1) DD1x x x x 370, Ceramic capacitor
Disc type
① ② Temp. coeff. P350 ~ N1000, 50V
② Capacity value
① Tolerance

Examples ;
① Tolerance (Capacity deviation)

± 0.25pF	0
± 0.5pF	1
± 5%	5

*Tolerance of COMMON PARTS handled here are as follows :

0.5pF ~ 5pF	± 0.25pF
6pF ~ 10pF	± 0.5pF
12pF ~ 560pF	± 5%

② Capacity value

0.5 pF 005	3 pF 030	100 pF 101
1 pF 010	10 pF 100	220 pF 221
1.5 pF 015	47 pF 470	560 pF 561

C＊＊＊ : CERAMIC CAP.
(1) DK16 x x x 300, High dielectric constant ceramic capacitor
① Disc type
Temp. chara. 2B4, 50V
Capacity value

Examples ;
① Capacity value

100 pF 101	1000 pF 102	10000 pF 103
470 pF 471	2200 pF 222	

C＊＊＊ : ELECTROLY CAP. (⏥), FILM CAP. (⫟)
(1) EA x x x x x x 10, Electrolytic capacitor
One-way lead type, Tolerance ± 20%
① ② Working voltage
Capacity value

Examples ;
① Capacity value

0.1 µF 104	4.7 µF 475	100 µF 107
0.33 µF 334	10 µF 106	330 µF 337
1 µF 105	22 µF 226	1100 µF 118
		2200 µF 228

② Working voltage

6.3 V 006	25 V 025
10 V 010	35 V 035
16 V 016	50 V 050

(2) DF15 x x x 350 → Plastic film capacitor
DF15 x x x 310 → One-way type, Mylar ± 5% 50V
DF16 x x x 310 → Plastic film capacitor
One-way type, Mylar ± 10% 50V
① Capacity value

Examples ;
① Capacity value

0.001 µF (1000pF) 102	0.1 µF 104
0.0018 µF 182	0.56 µF 564
0.01 µF 103	1 µF 105
0.015 µF 153	

NOTE : 1) The above CODES (R＊＊＊, R＊＊＊, C＊＊＊, C＊＊＊ and C＊＊＊) are omitted on the schematic diagram in some case.
2) On the occasion, be confirmed common parts on the parts list.
3) Refer to "Common Parts List" for the other common parts (**R105, DD4, DK4**).

NOTE ON SAFETY FOR FUSIBLE RESISTOR :

The suppliers and their type numbers of fusible resistors aer as follows :

1. KOA Corporation

Part No.	Type No.	Description
NH05 x x x 140	→ RF25S x x x x Ω J	(± 5% 1/4W)
NH05 x x x 120	→ RF50S x x x x Ω J	(± 5% 1/2W)
NH85 x x x 110	→ RF73B2A x x x x Ω J	(± 5% 1/10W)
NH85 x x x 140	→ RF73B2E x x x x Ω J	(± 5% 1/4W)

＊ Resistance value — Resistance value (0.1 - 10kΩ)

2. Matsushita Electronic Components Co., Ltd

Part No.	Type No.	Description
NF05 x x x 140	→ ERD–2FCJ x x x	(± 5% 1/4W)
RF05 x x x 140		
NF02 x x x 140	→ ERD–2FCG x x x	(± 2% 1/4W)
RF02 x x x 140		

＊ Resistance value — ＊ Resistance value

Examples :
＊ Resistance value

0.1 Ω.....001	10 Ω.....100	1 kΩ.....102	100 kΩ.....104
0.5 Ω.....005	18 Ω.....180	2.7 kΩ.....272	680 kΩ.....684
1 Ω.....010	100 Ω.....101	10 kΩ.....103	1 MΩ.....105
6.8 Ω.....068	390 Ω.....391	22 kΩ.....223	4.7 MΩ.....475

ABBREVIATION AND MARKS

1	ANT.	: ANTENNA	2	BATT.	: BATTERY
3	CAP.	: CAPACITOR	4	CER.	: CERAMIC
5	CONN.	: CONNECTING	6	DIG.	: DIGITAL
7	HP	: HEADPHONE	8	MIC.	: MICROPHONE
9	µ–PRO	: MICROPROCESSOR	10	REC.	: RECORDING
11	RES.	: RESISTOR	12	SPK	: SPEAKER
13	SW	: SWITCH	14	TRANSF.	: TRANSFORMER
15	TRIM.	: TRIMMING	16	TRS.	: TRANSISTOR
17	VAR.	: VARIABLE	18	X'TAL	: CRYSTAL
19			20		
21			22		
23			24		
25			26		
27			28		
29			30		

NOTE ON SAFETY :

Symbol ⚠ Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol ⚠ . Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

安全上の注意：

⚠ がついている部品は、安全上重要な部品です。必ず指定されている部品番号の部品を使用して下さい。

[VERS. :VERSION, U:U.S.A, F:Japan, K:Far East, /XX: Europe]

POS. NO.	VERS. COLOR	PART NO. (For EUROPE)	DESCRIPTION	PART NO. (For U/K/F)
			PW16-XLR CIRCUIT BOARD	
			[PMD321 ONLY]	
			PW16-CAPACITORS	
CW01		4822 124 41539	ELECT 47 µF 16V RA-2	OA47601620
CW02			CER. 0.047 µF +80%-20%	DA17473110
CW03			CER. 470 PF ± 10%	DA16471110
CW04			CER. 470 PF ± 10%	DA16471110
CW05			CER. 0.01 µF ± 20%	DA17103110
CW06			CER. 0.01 µF ± 20%	DA17103110
C201				
§		4822 124 90354	ELECT 100 µF 16V RA-2	OA10701620
C204				
C205		4822 124 41539	ELECT 47 µF 16V RA-2	OA47601620
C206		4822 124 41539	ELECT 47 µF 16V RA-2	OA47601620
C207			CER. 270 PF ± 10%	DA16221110
C208			CER. 270 PF ± 10%	DA16221110
C209				
§		4822 124 90354	ELECT 100 µF 16V RA-2	OA10701620
C212				
C213			CER. 100 PF ± 10%	DA16101110
C214			CER. 100 PF ± 10%	DA16101110
C215			CER. 270 PF ± 10%	DA16221110
C216			CER. 270 PF ± 10%	DA16221110
C217				
§		4822 124 90354	ELECT 100 µF 16V RA-2	OA10701620
C220				
C221			CER. 100 PF ± 10%	DA16101110
C222			CER. 100 PF ± 10%	DA16101110
C223				
§		4822 124 41539	ELECT 47 µF 16V RA-2	OA47601620
C226				
			PW16-RESISTORS	
⚠RW01		4822 111 90967	FUSE 4.7Ω ± 5% 1/4W	NF05047140
⚠R209		4822 052 10279	FUSE 27Ω ± 2% 1/4W	NF02270140
⚠R210		4822 052 10279	FUSE 27Ω ± 2% 1/4W	NF02270140
R221		4822 101 30882	VARIABLE RESIST RK09L1120 20KΩ	RB02030350
R222		4822 101 30882	VARIABLE RESIST RK09L1120 20KΩ	RB02030350
⚠R239				
§		4822 111 31049	FUSE 27Ω ± 2% 1/4W	NF02270140
⚠R242				
			PW16-RESISTOR (COMMON)	
R***			CARBON FILM FIXED RESISTOR, ± 5% 1/6W: RN11~RN14, RN51~RN54, RW02~RW06, R201~R208, R211~R220, R231~R238, R243~R250	
			PW16-SEMICONDUCTORS	
QN13				
§		4822 130 43818	TRS. 2SC2878 (A OR BRANK)	HT328782A0
QN19				
QN22		4822 130 43818	TRS. 2SC2878 (A OR BRANK)	HT328782A0
QW01		5322 209 60473	IC, SN75158/P	HC10071370
Q201		4822 209 83274	IC, NJM4560D	HC10007090
Q211		4822 209 83662	IC, NJM5532D	HC10023090
Q212		4822 209 83662	IC, NJM5532D	HC10023090
			PW16-MISCELLANEOUS	
JW02		4822 265 41528	JACK, ZC-115 15P	YJ07009730
JW03		4822 267 31946	PLUG, CANNON YKF52-5003	YP10003340
J201		4822 267 31946	PLUG, CANNON YKF52-5003 (L-CH)	YP10003340
J202		4822 267 31946	PLUG, CANNON YKF52-5003 (R-CH)	YP10003340
LW01		4822 148 81381	PULSE TRANSF. TC-1086-26	TP33842010
LW02		4822 158 60605	FERRITE CORE, BEADS (B-01-RT)	FC90050060
LW03		4822 158 60605	FERRITE CORE, BEADS (B-01-RT)	FC90050060
LW04		4822 242 73843	EMI FILTER, DSS306-91-F-223Z	FM12223010
L201				
§		4822 158 60605	FERRITE CORE, BEADS (B-01-RT)	FC90050060
L204				
L205		4822 242 73843	DSS306-91-F-223Z	FM12223010
L206		4822 242 73843	DSS306-91-F-223Z	FM12223010

POS. NO.	VERS. COLOR	PART NO. (For EUROPE)	DESCRIPTION	PART NO. (For U/K/F)
			PY16-FRONT CIRCUIT BOARD	
			PY16-CAPACITOR	
CY01			CER. 0.047 µF +80%-20%	DA17473110
			PY16-RESISTOR (COMMON)	
R***			CARBON FILM FIXED RESISTOR, ± 5% 1/6W: PY01	
			PY16-SEMICONDUCTORS	
DY01				
§		4822 130 32362	DIODE, 1SS176,MA165,1SS254 30V 0.1A	HD20002000
DY04				
			PY16-MISCELLANEOUS	
JY01			JACK, 37 PIN FFC (L-TYPE)	YJ06011470
SY01				
§		4822 276 20508	PUSH SW, TACT SW	SP01011280
SY14				
SY15				
§		4822 276 13296	PUSH SW, TACT SW (100GF)	SP01011880
SY24				
VY01		4822 130 91287	DISPLAY UNIT, 9MT131GK FTD	HQ3091441
			P116-MAIN CIRCUIT BOARD	
			P116-CAPACITORS	
CD01			CER. 0.047 µF +80%-20%	DA17473110
CD02		4822 124 41539	ELECT 47 µF 10V	OA47601620
CD03			CER. 0.047 µF +80%-20%	DA17473110
CD04		4822 124 41539	ELECT 47 µF 16V	OA47601620
CD05			CER. 0.047 µF +80%-20%	DA17473110
CD06		4822 124 41539	ELECT 47 µF 16V	OA47601620
CD07		4822 124 41539	ELECT 47 µF 16V	OA47601620
CD11			FILM 470 PF ± 5% 50V	DF15471350
CD12			FILM 470 PF ± 5% 50V	DF15471350
CE01		4822 124 90357	ELECT 2.2 µF 50V	OA22505020
CE02		4822 124 41534	ELECT 10 µF 25V	OA10602520
CE03		4822 124 41539	ELECT 47 µF 16V	OA47601620
CE04		4822 124 41539	ELECT 47 µF 16V	OA47601620
CE05			CER. 0.047 µF +80%-20%	DA17473110
CE06			CER. 0.047 µF +80%-20%	DA17473110
CF01			CER. 0.047 µF +80%-20%	DA17473110
CF02		4822 124 41539	ELECT 47 µF 16V	OA47601620
CF03		4822 124 22274	ELECT 4.7 µF 50V	OA47505020
CF51			CER. 0.047 µF +80%-20%	DA17473110
CF52		4822 124 41534	ELECT 10 µF 25V	OA10602520
⚠CH11			FILM 0.01 µF ± 20% 250V	DF77103500
⚠CN01		4822 124 22277	ELECT 470 µF 16V	OA47701620
CN02		4822 124 90357	ELECT 2.2 µF 50V	OA22505020
CN03		4822 124 41534	ELECT 10 µF 25V	OA10602520
CP01			CER. 0.047 µF +80%-20%	DA17473110
CP02		4822 124 41539	ELECT 47 µF 16V	OA47601620
CP03			CER. 10 PF ± 0.5PF	DD11100300
CP04			CER. 10 PF ± 0.5PF	DD11100300
CP05			CER. 0.047 µF +80%-20%	DA17473110
CP06		4822 124 41539	ELECT 47 µF 16V	OA47601620
CP07			CER. 0.047 µF +80%-20%	DA17473110
CP08		4822 124 41539	ELECT 47 µF 16V	OA47601620
CP09			CER. 27 PF ± 5%	DA15270110
CP10			CER. 0.047 µF +80%-20%	DA17473110
CP11		4822 124 41539	ELECT 47 µF 16V	OA47601620
CP15			CER. 0.047 µF +80%-20%	DA17473110
CP16		4822 124 41539	ELECT 47 µF 16V	OA47601620
CT02			CER. 4700 PF +80%-20%	DK18472310
CT04			CER. 0.022 µF +80%-20%	DK18223310
C111				
§			CER. 220 PF ± 5%	DD15221300
C116				
C119			CER. 0.047 µF +80%-20%	DA17473110
C120		4822 124 41539	ELECT 47 µF 16V	OA47601620

[VERS.:VERSION, U:U.S.A, F:Japan, K:Far East, /XX:Europe]

POS. NO.	VERS. COLOR	PART NO. (For EUROPE)	DESCRIPTION	PART NO. (For U/K/F)
C121			CER. 0.047 µF +80%-20%	DA17473110
C122		4822 124 41539	ELECT 47 µF 16V	OA47601620
C123			CER. 0.047 µF +80%-20%	DA17473110
C124		4822 124 41534	ELECT 10 µF 25V	OA10602520
C134		4822 124 90357	ELECT 2.2 µF 50V	OA22505020
C135		4822 124 41539	ELECT 47 µF 16V	OA47601620
C136			CER. 0.022 µF +80%-20%	DK18223310
C137			CER. 0.022 µF +80%-20%	DK18223310
C138		4822 124 41539	ELECT 47 µF 16V	OA47601620
C143			CER. 150 PF ±10%	DA16151110
C144			CER. 150 PF ±10%	DA16151110
C146			CER. 0.022 µF +80%-20%	DK18223310
C148			CER. 0.022 µF +80%-20%	DK18223310
C151			CER. 0.022 µF +80%-20%	DK18223310
C152			CER. 0.022 µF +80%-20%	DK18223310
C153		4822 124 41539	ELECT 47 µF 16V	OA47601620
C154		4822 124 41539	ELECT 47 µF 16V	OA47601620
C501			CER. 150 PF ±10%	DA16151110
C503			CER. 0.047 µF +80%-20%	DA17473110
C504		4822 124 90363	ELECT 220 µF 10V	OA22701020
C507			CER. 47 PF ±5%	DA15470110
C508			CER. 0.022 µF +80%-20%	DK18223310
C509			CER. 0.047 µF +80%-20%	DA17473110
C510		4822 124 90363	ELECT 220 µF 10V	OA22701020
C511		4822 124 90363	ELECT 220 µF 10V	OA22701020
C512			CER. 0.047 µF +80%-20%	DA17473110
C513			CER. 0.047 µF +80%-20%	DA17473110
C514			CER. 47 PF ±5%	DA15470110
C521			CER. 10 PF ±5%	DD11100300
C522			CER. 39 PF ±5% [PMD320]	DD15390300
C522			CER. 10 PF ±5% [PMD321]	DD11100300
C523			CER. 0.01 µF +80%-20%	DA17103110
C601		4822 124 41539	ELECT 47 µF 16V	OA47601620
C602		4822 124 41539	ELECT 47 µF 16V	OA47601620
C603			CER. 47 PF ±5%	DA15470110
C604			CER. 47 PF ±5%	DA15470110
C611		4822 124 90354	ELECT 100 µF 16V	OA10701620
C612		4822 124 90354	ELECT 100 µF 16V	OA10701620
C651		4822 124 90364	ELECT 220 µF 16V [PMD320]	OA22701620
C652		4822 124 90364	ELECT 220 µF 16V [PMD320]	OA22701620
C653		4822 124 90364	ELECT 220 µF 16V [PMD320]	OA22701620
C654		4822 124 90364	ELECT 220 µF 16V [PMD320]	OA22701620
C655			CER. 100 PF ±10% [PMD320]	DA16101110
C656			CER. 100 PF ±10% [PMD320]	DA16101110
⚠C803		4822 124 41538	ELECT 220 µF 35V	OA22703520
⚠C804		4822 124 41538	ELECT 220 µF 35V	OA22703520
C805		4822 124 41539	ELECT 47 µF 16V	OA47601620
C806		4822 124 41539	ELECT 47 µF 16V	OA47601620
C811			CER. 0.047 µF +80%-20%	DA17473110
C812			CER. 0.047 µF +80%-20%	DA17473110
⚠C813		4822 124 80582	ELECT 4700 µF 16V	OA47801620
⚠C814		4822 124 22722	ELECT 1000 µF 16V	OA10801620
C815		4822 124 41539	ELECT 47 µF 16V	OA47601620
⚠C852		4822 124 90355	ELECT 100 µF 50V	OA10705020
C853			ELECT 47 µF 35V	OA47603520
C854		4822 124 90355	ELECT 100 µF 50V	OA10705020
C901		4822 124 41534	ELECT 10 µF 25V	OA10602520
C902		4822 124 41534	ELECT 10 µF 25V	OA10602520
C903		4822 124 41539	ELECT 47 µF 16V	OA47601620
C904		4822 124 41539	ELECT 47 µF 16V	OA47601620
C905			CER. 100 PF ±10%	DA16101110
C906			CER. 100 PF ±10%	DA16101110
C***			**P116-CAPACITORS (COMMON)** CER. CAPACITOR DISC TYPE, TEMP. COEFF. P350~N1000, 50V: C502	
C***			HIGH DELECTRIC CONSTANT CER. CAPACITOR DISC TYPE, TEMP CHARA. 2B4 50V: CP18, CP51, CT03, C117, C118, C505	

POS. NO.	VERS. COLOR	PART NO. (For EUROPE)	DESCRIPTION	PART NO. (For U/K/F)
C***			PLASTIC FILM CAPACITOR ONE WAY TYPE, MYLAR ±5% 50V CT101, C131~C133, C139~C142, C149, C155, C156, C161, C506	
			P116-RESISTORS	
⚠RD01				
⚠RD03		4822 111 90967	FUSE 4.7Ω ±5% 1/4W	NF05047140
⚠RF01		4822 111 90967	FUSE 4.7Ω ±5% 1/4W	NF05047140
⚠RN08		4822 111 90967	FUSE 4.7Ω ±5% 1/4W	NF05047140
⚠RP01		4322 111 90967	FUSE 4.7Ω ±5% 1/4W	NF05047140
⚠RP03		4822 111 90967	FUSE 4.7Ω ±5% 1/4W	NF05047140
⚠RP04		4822 111 90967	FUSE 4.7Ω ±5% 1/4W	NF05047140
⚠RP06		4822 111 90967	FUSE 4.7Ω ±5% 1/4W	NF05047140
⚠R122		4822 111 90967	FUSE 4.7Ω ±5% 1/4W	NF05047140
⚠R123		4822 111 90967	FUSE 4.7Ω ±5% 1/4W	NF05047140
⚠R127		4822 111 90967	FUSE 4.7Ω ±5% 1/4W	NF05047140
⚠R128		4822 111 90967	FUSE 4.7Ω ±5% 1/4W	NF05047140
⚠R136		4822 111 90967	FUSE 4.7Ω ±5% 1/4W	NF05047140
⚠R149		4822 116 60307	FUSE 1Ω ±5% 1/4W	NH05010140
⚠R150		4822 116 60307	FUSE 1Ω ±5% 1/4W	NH05010140
⚠R164		4822 116 60307	FUSE 1Ω ±5% 1/4W	NH05010140
⚠R165		4822 116 60307	FUSE 1Ω ±5% 1/4W	NH05010140
⚠R508		4822 111 90967	FUSE 4.7Ω ±5% 1/4W	NF05047140
⚠R511		4822 111 90967	FUSE 4.7Ω ±5% 1/4W	NF05047140
⚠R611		4822 052 10279	FUSE 27Ω ±2% 1/4W	NF02270140
⚠R612		4822 052 10279	FUSE 27Ω ±2% 1/4W	NF02270140
R***			**P116-RESISTORS (COMMON)** CARBON FILM FIXED RESISTOR, ±5% 1/6W: RD11~RD13, RE01~RE05, RF02, RF03, RF06, RF08~RF17, RF20~RF23, RF51~RF57, RN01, RN02, RN04~RN07, RN09, RN10, RN15~RN18 [PMD320], RN23, RN26~RN31, RN91~RN94, RP02, RP05, RP07, RP08, RP51~RP57, RP59, RT01, RT02, R107, R114~R119, R121, R124~R126, R129~R135, R137~R148, R510, R514, R151~R163, R171, R501~R507, R509, R521, R522, R601~R606, R651~R658 [PMD320], R851~R855, R901~R904, R907~R919, R913, R914	
			P116-SEMICONDUCTORS	
DE01		4822 130 32362	DIODE, 1SS176,MA165,1SS254 30V 0.1A	HD20002000
DE02		4822 130 32362	DIODE, 1SS176,MA165,1SS254 30V 0.1A	HD20002000
DF01		4822 130 32362	DIODE, 1SS176,MA165,1SS254 30V 0.1A	HD20002000
DF03		4822 130 32362	DIODE, 1SS176,MA165,1SS254 30V 0.1A	HD20002000
DF04		4822 130 32362	DIODE, 1SS176,MA165,1SS254 30V 0.1A	HD20002000
DF51		4822 130 32362	DIODE, 1SS176,MA165,1SS254 30V 0.1A	HD20002000
DF52		4822 130 32362	DIODE, 1SS176,MA165,1SS254 30V 0.1A	HD20002000
⚠DN01				
⚠DN04		4822 130 80839	DIODE, S5688G VRM=400V I0=1A	HD20029050
DN05		4822 130 32362	DIODE, 1SS176,MA165,1SS254 30V 0.1A	HD20002000
DN06		4822 130 33948	ZENER DIODE, 5.6V MTZJ5.6B	HD30561000
DN07		4822 130 32362	DIODE, 1SS176,MA165,1SS254 30V 0.1A	HD20002000
DN23		4822 130 32362	DIODE, 1SS176,MA165,1SS254 30V 0.1A	HD20002000
DN24		4822 130 32362	DIODE, 1SS176,MA165,1SS254 30V 0.1A	HD20002000
D151		4822 130 80839	DIODE, S5688G VRM=400V I0=1A	HD20029050
D152		4822 130 80839	DIODE, S5688G VRM=400V I0=1A	HD20029050

[VERS.:VERSION, U:U.S.A, F:Japan, K:Far East, /XX:Europe]

POS. NO.	VERS. COLOR	PART NO. (For EUROPE)	DESCRIPTION	PART NO. (For U/K/F)
⚠D801				
S		4822 130 80839	DIODE, S5688G VRM=400V IO=1A	HD20029050
⚠D804				
⚠D811				
S		4822 130 80839	DIODE, S5688G VRM=400V IO=1A	HD20029050
⚠D814				
⚠D851		4822 130 80839	DIODE, S5688G VRM=400V IO=1A	HD20029050
⚠D852		4822 130 80318	ZENER DIODE, 6.8V MTZJ6.8C	HD30681000
D853		4822 130 33759	ZENER DIODE, 4.7V MTZJ4.7B	HD30471000
⚠D854	/02	4822 130 80839	DIODE, S5688G VRM=400V IO=1A	HD20029050
⚠D855	U	4822 130 80839	DIODE, S5688G VRM=400V IO=1A	HD20029050
QD01		4822 209 33252	IC, DAC TDA1549/N1	HC10130490
QE01		4822 130 42298	TRS. 2SC536SP, 2SC2458, 2SC3311, 2SC1740S	HT30001000
QF01			MAIN CPU MN187164	HU313KA000
QF02		4822 209 73951	IC, RESET IC PST523D	HC10010550
QF51		4822 130 42715	TRS. 2SA608SP, 2SA1048, 2SA1309, 2SA933	HT10001000
QF52		4822 130 42298	TRS. 2SC536SP,2SC2458, 2SC3311, 2SC1740S	HT30001000
QM01		4822 209 72587	IC, DUAL POWER OP AMP TCA0372	HC10034170
QN01				
S		4822 130 42298	TRS. 2SC536SP, 2SC2458,	HT30001000
QN04			2SC3311, 2SC1740S	
QN05				
S		4822 130 43818	TRS. 2SC2878 (A OR BRANK)	HT328782A0
QN08			[PMD320]	
QN20		4822 130 42298	TRS. 2SC536SP, 2SC2458, 2SC3311, 2SC1740S	HT30001000
QN24		4822 130 42715	TRS. 2SA608SP, 2SA1048, 2SA1309, 2SA933S	HT10001000
QN25		4822 130 42715	TRS. 2SA608SP, 2SA1048, 2SA1309, 2SA933S	HT10001000
QN91				
S		4822 130 43818	TRS. 2SC2878 (A OR BRANK)	HT328782A0
QN94				
QP01			IC, PF-G-BND MB87014A -TF	HC10103180
QP02			IC, SN74LS628NS	HC762837Z0
QP03		4822 209 30426	IC, 74HC00	HC700000Z0
Q104		4822 209 32763	IC, DIG. SERVO TDA1301T	HC10106490
Q105		4822 209 72587	IC, DUAL POWER OP AMP CA0372	HC10034170
Q106		4822 209 72587	IC, DUAL POWER OP AMP TCA0372	HC10034170
Q501		4822 130 42298	TRS. 2SC536SP, 2SC2458, 2SC3311, 2SC1740S	HT30001000
Q502		4822 130 42298	TRS. 2SC536SP, 2SC2458, 2SC3311, 2SC1740S	HT30001000
Q503		4822 209 33339	IC, CD DECODER SAA7345GP/M5X	HC10128490
Q601		4822 209 83274	IC, NJM4560D	HC10007090
⚠Q801		4822 209 31712	IC, NJM78M12FA	HC38512090
⚠Q802		4822 209 63641	IC, NJM79M12FA	HC39512090
⚠Q811		4822 209 31631	IC, NJM7805FA	HC38905090
⚠Q851		4822 209 83829	IC, REG. NJM79M18FA	HC39518090
Q852		4822 130 42298	TRS. 2SC536SP, 2SC2458, 2SC3311, 2SC1740S	HT30001000
Q853		4822 130 42715	TRS. 2SA608SP, 2SA1048, 2SA1309, 2SA933S	HT10001000
Q854		4822 130 42715	TRS. 2SA608SP, 2SA1048, 2SA1309, 2SA933S	HT10001000
Q901		4822 209 82362	IC, NJM4556D	HC10016090
			P116-MISCELLANEOUS	
⚠FH11	U		FUSE, 1.6A 125V FBM	FS10160360
⚠FH11	/02	4822 070 36301	FUSE, 630MA 250V BS LISTED	FS10063850
⚠FH12	U		FUSE, 1.6A 125V FBM	FS10160360
⚠FH12	/02	4822 070 36301	FUSE, 630MA 250V BS LISTED	FS10063850
JE01		4822 267 31691	JACK, FADER	YJ01003870
JF01			JACK, 37 PIN FFC	YJ06011070
JF03		4822 267 41009	TERMINAL, 2P RCA (RC-5 IN/OUT)	YT02020890
JM01		4822 265 30473	PLUG, 6P	YP06003420
JM02		4822 265 30482	PLUG, 4P	YP06003440

POS. NO.	VERS. COLOR	PART NO. (For EUROPE)	DESCRIPTION	PART NO. (For U/K/F)
JT02			TERMINAL, 1P RCA DIG. OUT	YT02010780
JW07		4822 265 41351	JACK, ZC-015 15P [PMD321]	YJ07007960
J103		4822 265 41351	JACK, 15P	YJ07007960
J601			TERMINAL, 2P RCA ANA. OUT [PMD320]	YT02021210
LT01		4822 142 60388	PULSE TRANSF.	TP41042010
⚠L001	U		POWER TRANSF.	TS15734030
⚠L001	/02	4822 146 21749	POWER TRANSF.	TS15734010
⚠SH91		4822 276 13364	PUSH SW, POWER SW	SP01011990
XF01		4822 242 72066	CER. VIB., 8.0MHZ	FQ08004010
XP01		4822 242 72334	X'TAL 16.9344MHZ	JX16002260
X101		4822 242 81536	CER. VIB. 8.46MTW	FQ08464010
			P126-HF CIRCUIT BOARD	
			P126-CAPACITORS	
C101			CER. 100 PF ±10%	DA16101110
C102			CER. 47 PF ±5%	DA15470110
C103			CER. 47 PF ±5%	DA15470110
C104			CER. 18 PF ±5%	DA15180120
C105			CER. 150 PF ±10%	DA16151110
C106		4822 124 41534	ELECT 10 µF 25V	OA10602520
C107			CER. 0.047 µF +80%-20%	DA17473110
C108			CER. 150 PF ±10%	DA16151110
C109			CER. 150 PF ±10%	DA16151110
C110			CER. 330 PF ±10%	DA16331110
			P126-RESISTORS (COMMON)	
R***			CARBON FILM FIXED RESISTOR, ±5% 1/6W: R101~R106	
			P126-SEMICONDUCTORS	
Q101		4822 130 61748	TRS. 2SC2668-O	HT32668100
Q102		4822 130 42298	TRS. 2SC536SP, 2SC2458, 2SC3311, 2SC1740S	HT30001000
Q103		4822 130 42715	TRS. 2SA608SP, 2SA1048, 2SA1309, 2SA933S	HT10001000
			P126-MISCELLANEOUS	
J101		4822 265 41349	JACK, TOC-L12X-A1 12P	YJ07007950
J102		4822 265 41351	JACK, ZC-015 15P	YJ07007960
			P136-H.P CIRCUIT BOARD	
			P136-CAPACITOR	
C980			CER. 0.022 µF +80%-20%	DK18223310
			P136-MISCELLANEOUS	
J900		4822 267 31691	JACK, HEAD PHONE	YJ01003870